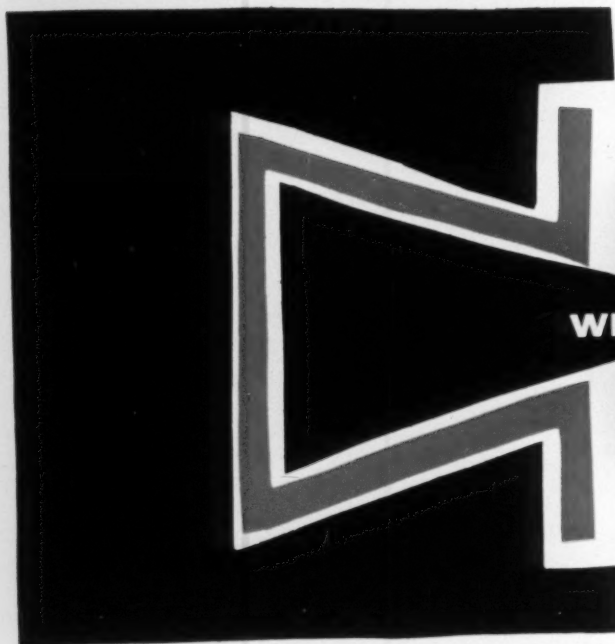
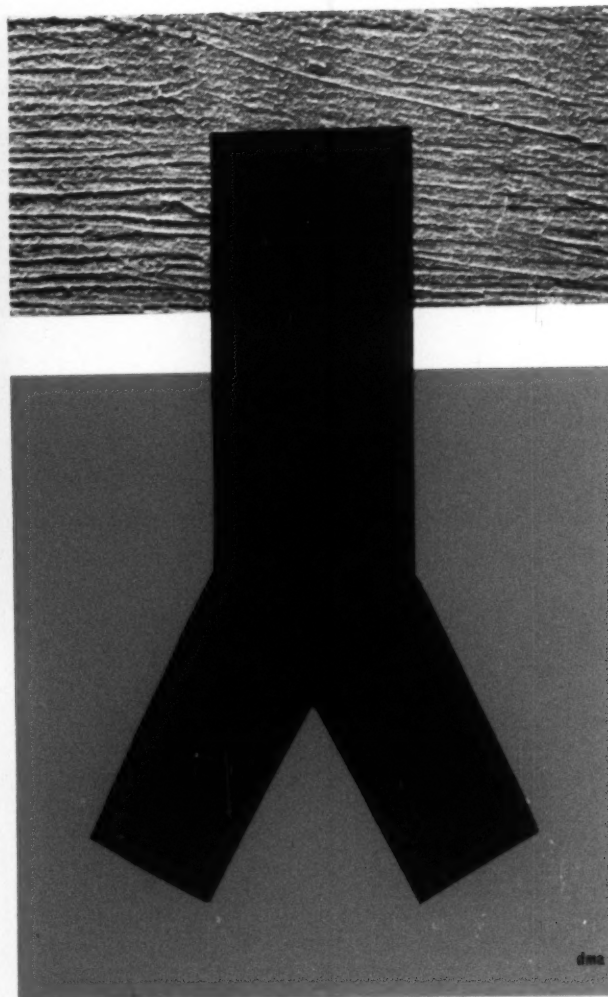
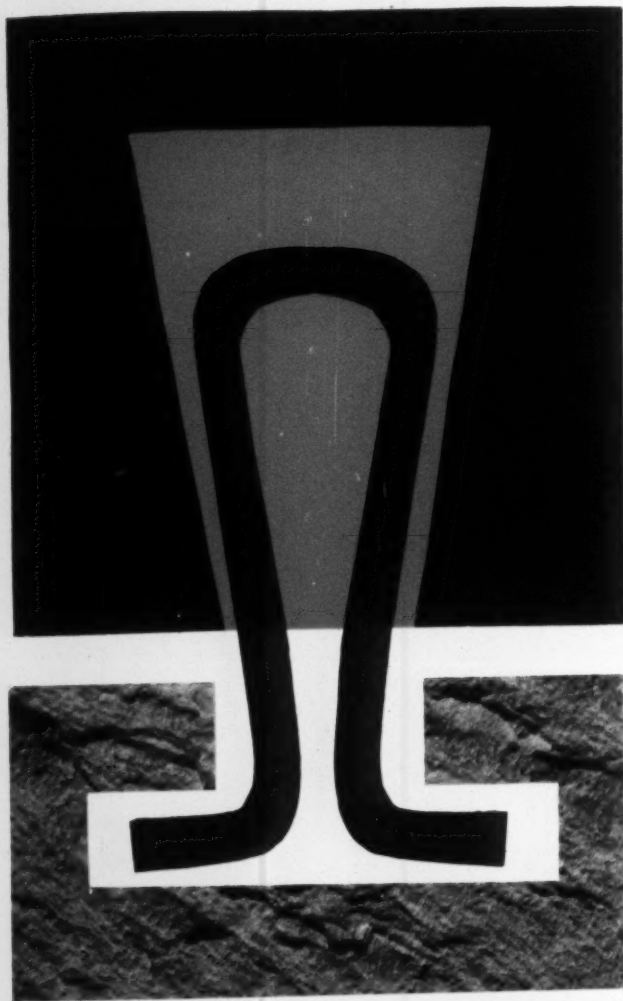


THE ARCHITECTURAL REVIEW VOLUME CXXIV NUMBER 740 SEPTEMBER 1958 FIVE SHILLINGS

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A sound inert material with
a permanent blue-grey precision
eminently suited to modern
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Architects' Journal Information
Sheet 5, B2 describes
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London Student's Union Building—Malet St., W.C.1
Architect: Messrs. Adams, Holden & Pearson.*

The whole of the glazed tiling,
also the unglazed tiling to the circular
columns for this elegant swimming
bath in the new University of
London Student's Union Building
was carried out by the firm
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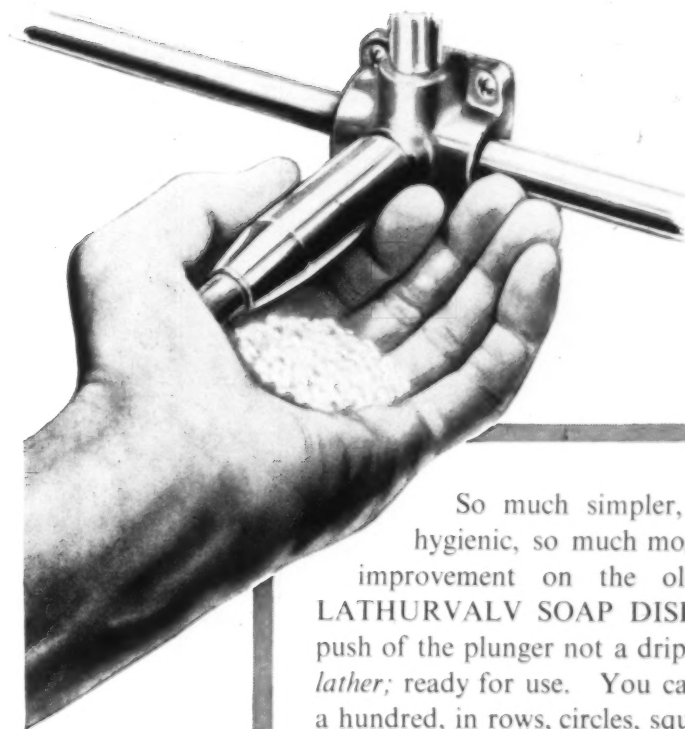
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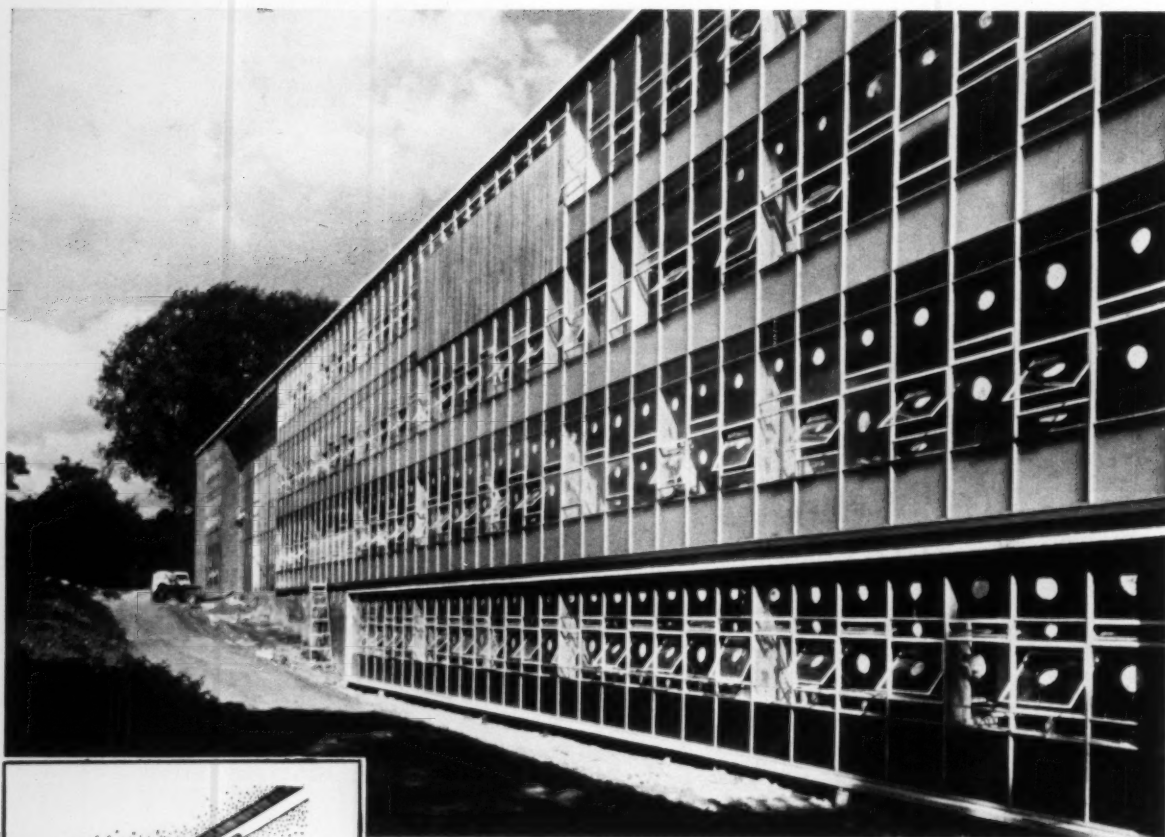
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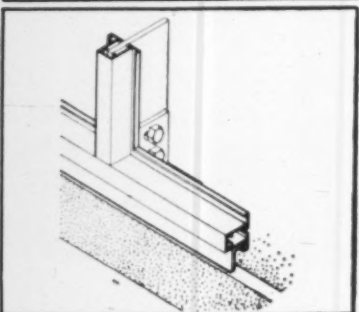
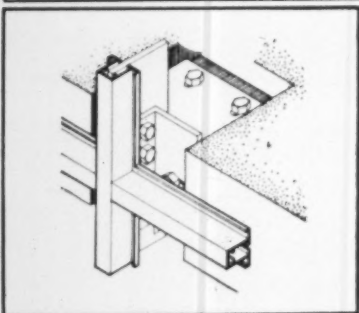
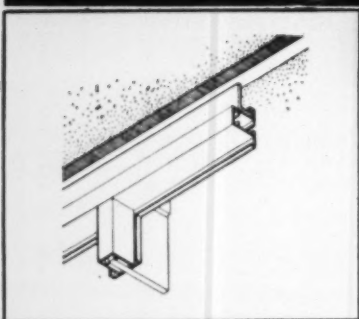
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Parliament Hill County School

ARCHITECT: DR. J. L. MARTIN, M.A., F.R.I.B.A.



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*Ronald Bradbury, Ph.D., F.R.I.B.A., A.M.T.P.I.
(City Architect and Director of Housing)*

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*Henry T. Hough, M.I.C.E., M.I.M.U.E., M.T.P.I.
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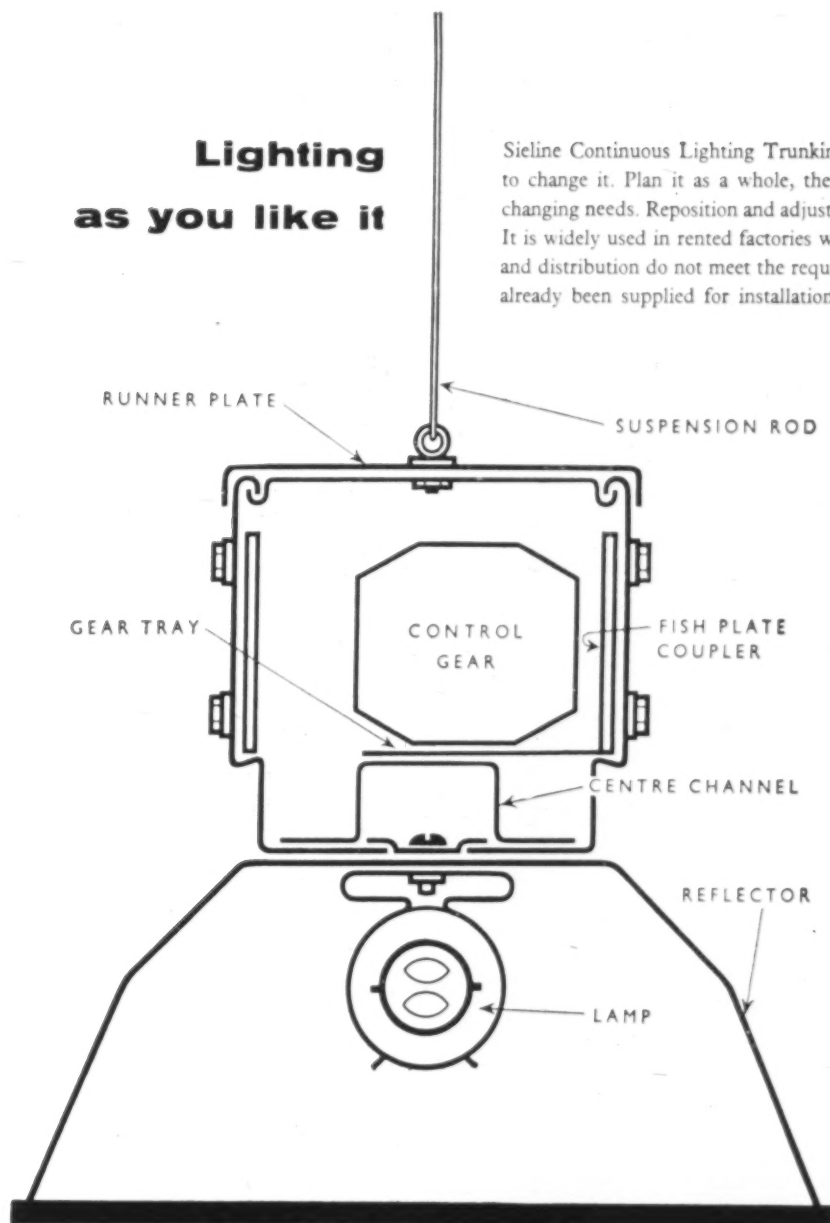
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H.W. 127

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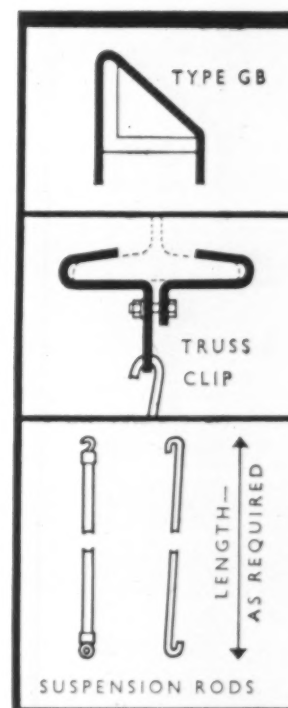


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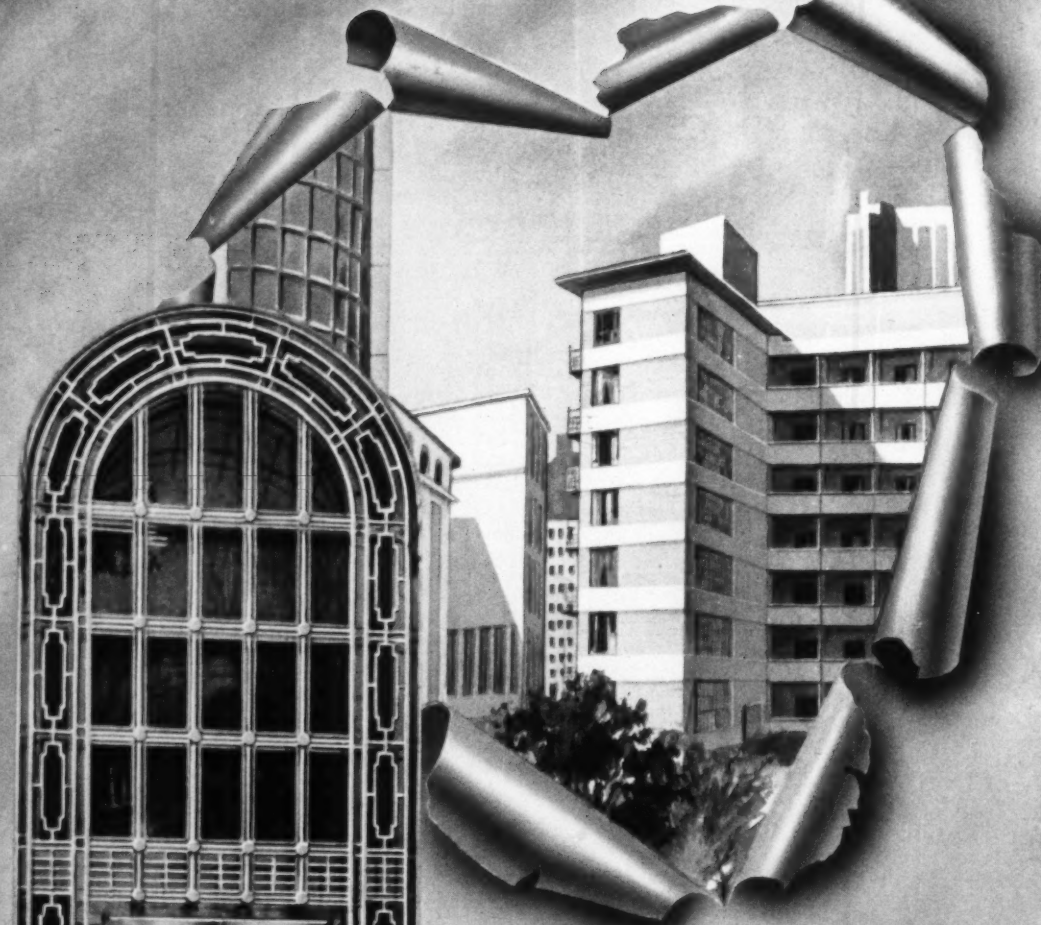


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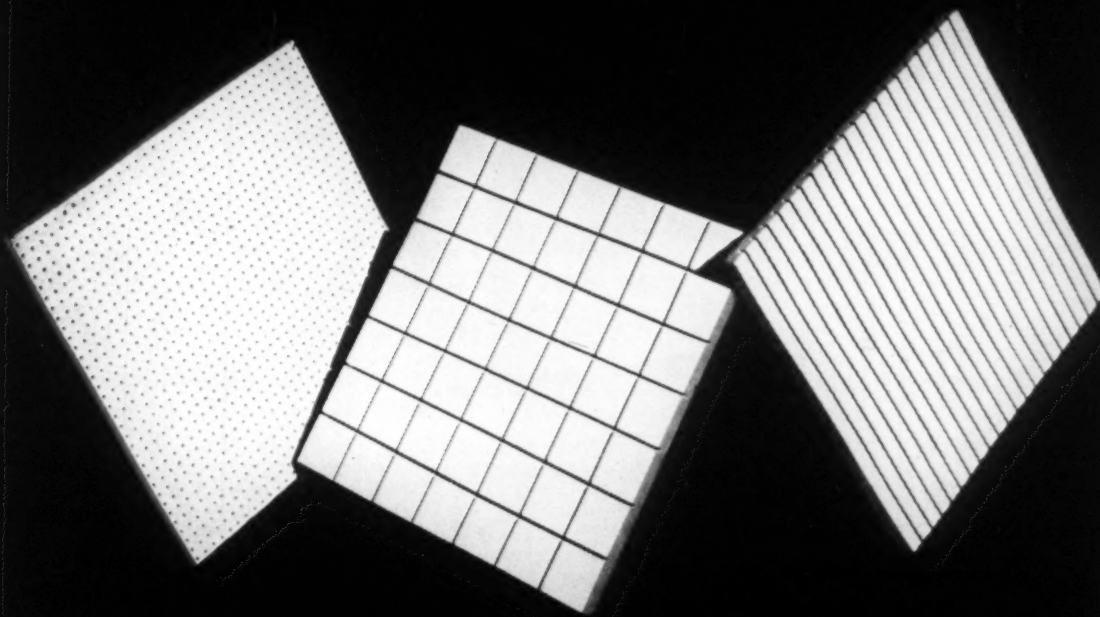
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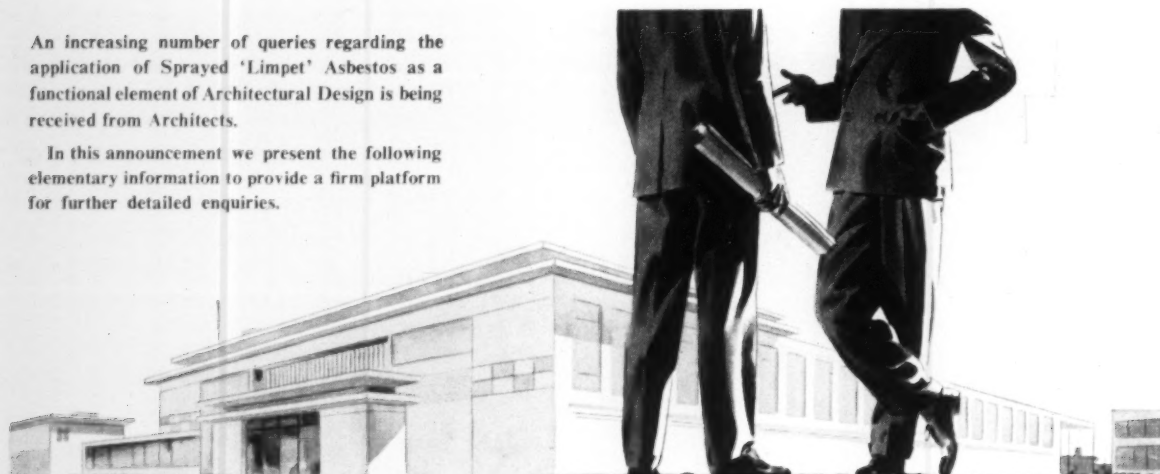


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an architect asks questions about Sprayed 'Limpet' Asbestos by NEWALLS

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"Being porous, isn't the treatment liable to premature rotting where condensation exists?"

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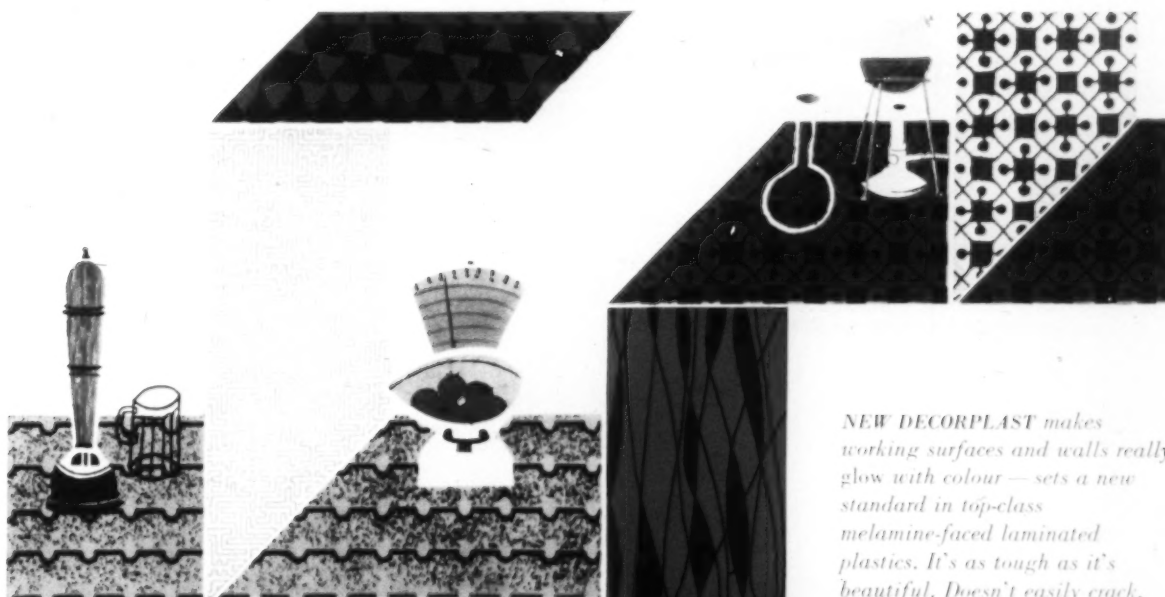
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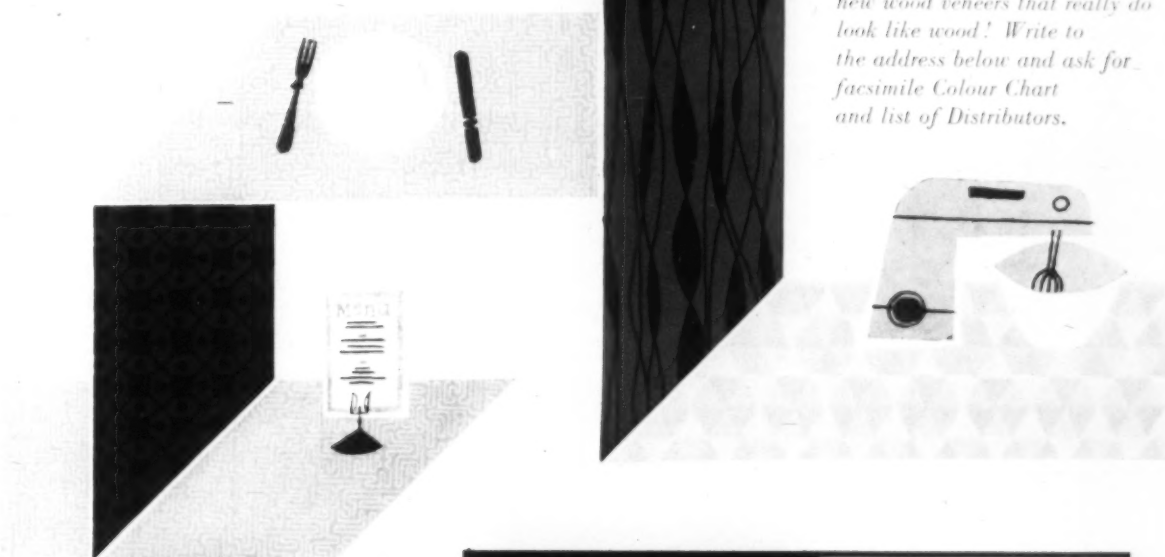
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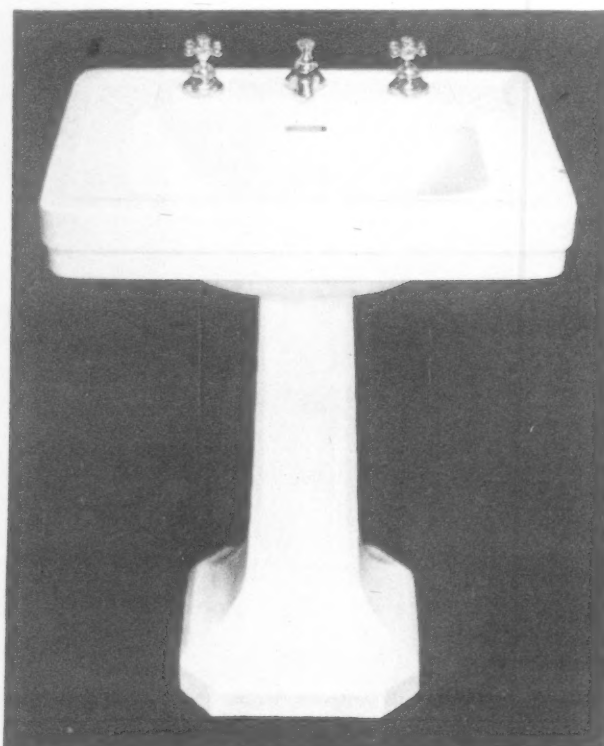
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"Standard"



★ In many countries it is officially required that Sanitary Appliances be made of Vitreous China. Many British architects, doctors, and Public Health Authorities would like to see similar legislation in Britain and so, not unnaturally, would the makers of "Standard" Sanitary Appliances.



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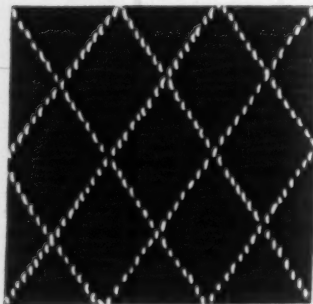
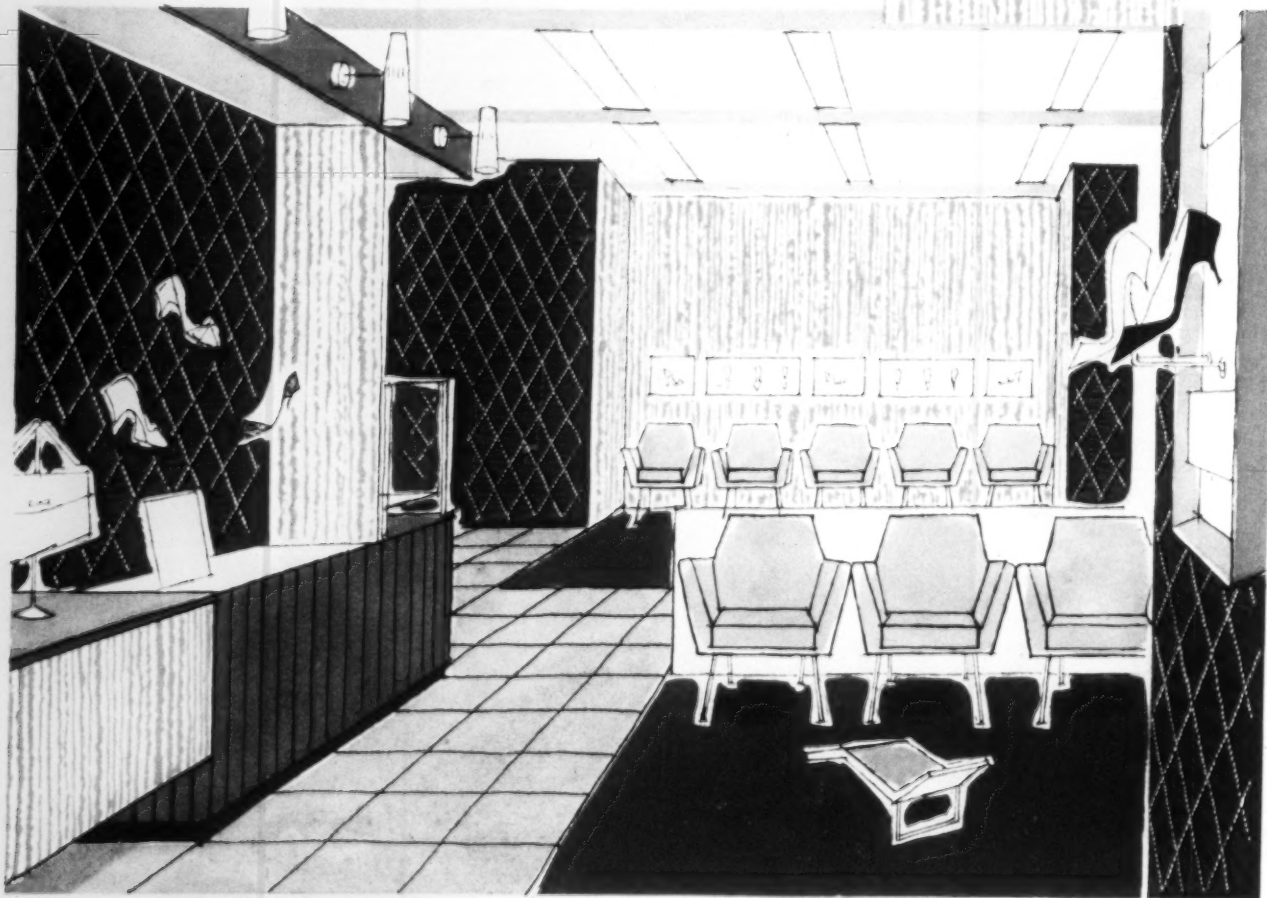


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(for wood, lino, cork, etc.)
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Sposs Floor Seal provides exceptionally good coverages. 1 gallon will seal 150-200 sq. yds. When comparing the price of different Floor Seals this is a very important factor.

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The Seal penetrates the surface and combines with the top fibres of the floor, forming a hard, waterproof skin which protects and preserves porous surfaces.

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Sposs Floor Seal is quick-drying (4 to 6 hours, or less according to weather). It is available in Light Oak, Dark Oak, Red and Natural colours. Can be used to revive old floors with an open grain.



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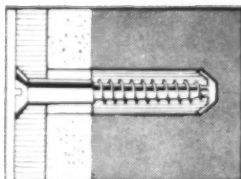
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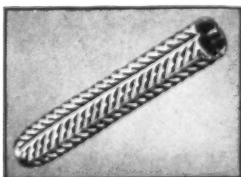
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RAWLPLUG FIXING DEVICES and TOOLS...

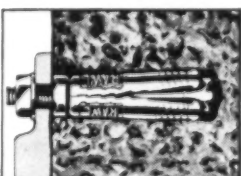
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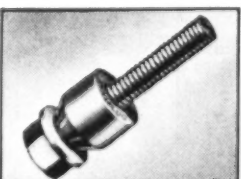
For firm Screw Fixings. The specially treated fibrous construction of the Rawlplug provides the most effective stronghold for wood-screws in any masonry. The simple method of making the hole, inserting the Rawlplug and driving home the screw enables firm fixings to be made quickly without mess or damage to walls or decorations. Sizes are from the tiny No. 3 to the 1" diameter No. 30.



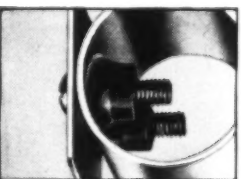
On the occasions where a metal plug is preferred or advised, such as for wet or acid situations, there is the choice of Rawlplug Screw Anchors or White Bronze Plugs, but for these Cadmium plated screws should be used.



Heavy Duty Fixings. RAWLBOLTS are expansion bolts which only require a hole in the masonry in the same way as a Rawlplug. By turning the bolt the metal segments are locked within the hole and the fixing will take very heavy loads with complete safety. Sizes are from 3/16" to 1" diameter.

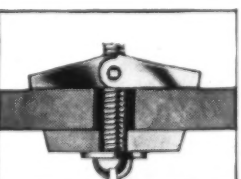


Wet or Acid Situations. Rawlplug Bolt Anchors and Rawltamps are made for heavy duty bolt fixings in places where the exposure to corrosion is extremely high. The Bolt Anchor can be set deep down in thick concrete whereas the Rawltamp enables a threaded insert to be fixed in shallow concrete.



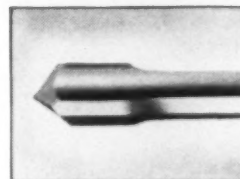
Thin or Cavity Walls. Proprietary building materials often present fixing problems because of being either hard and thin or thick and soft. The Rawlplug Company have devised several clever devices for making firm fixings to such materials including lath and plaster ceilings, hollow pot, panel doors, etc.

The upper illustration shows how one of the devices will make the almost impossible fixing of a metal plate to a pipe and the bottom illustration shows how the wings of a Spring Toggle spread the load over a plasterboard ceiling.

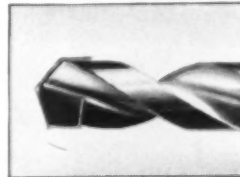


Rawlplug Fixing Devices and Hole Boring Tools are sold by Ironmongers, Hardware Dealers, Builders Merchants and Stores. If you experience any difficulty in obtaining the type and size you require please send details to the following address.

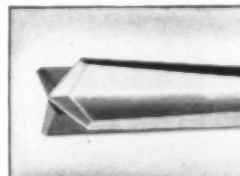
Rawldrills. Standard sizes for Rawlplugs Nos. 3 to 30 and Rawlbolts A, B, C, D, E, and G. Adaptable Rawldrills need only three holders for the 10 sizes Nos. 3 to 22. There is also a very useful Universal Tool-set with a knurled holder to take Universal Rawldrills Nos. 6 to 20.



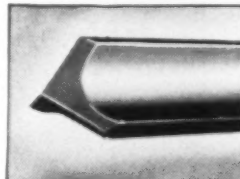
Durium tipped Drills. For faster, silent penetration of masonry and tiles Durium drills are the answer. They can be used in hand or suitable electric drills. Sizes for Rawlplugs Nos. 6 to 30; for C, D, E, and G, Rawlbolts, and a long series for drilling right through walls. Free sharpening Voucher given with every Durium drill.



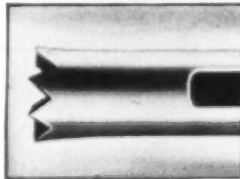
Rawlplug Stardrills. An inexpensive one piece tool for use on jobs needing a small number of holes. Twenty sizes from 11/32" to 2 1/4" are made, of which eight are for Rawlbolts "A" to "K", and it is only necessary to quote the reference letters of the Rawlbolts when ordering Stardrills to use with them.



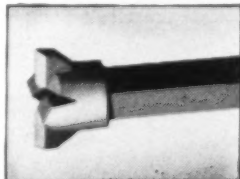
Wall Boring Tools. Specially designed for rapid boring right through walls. This triple fluted percussion tool with hexagon handle in one complete unit has been proved to make a 1/4" hole right through a 9" stock brick wall in nine minutes. Lengths 18" and 24", diameters from 5/16" to 1 1/4".



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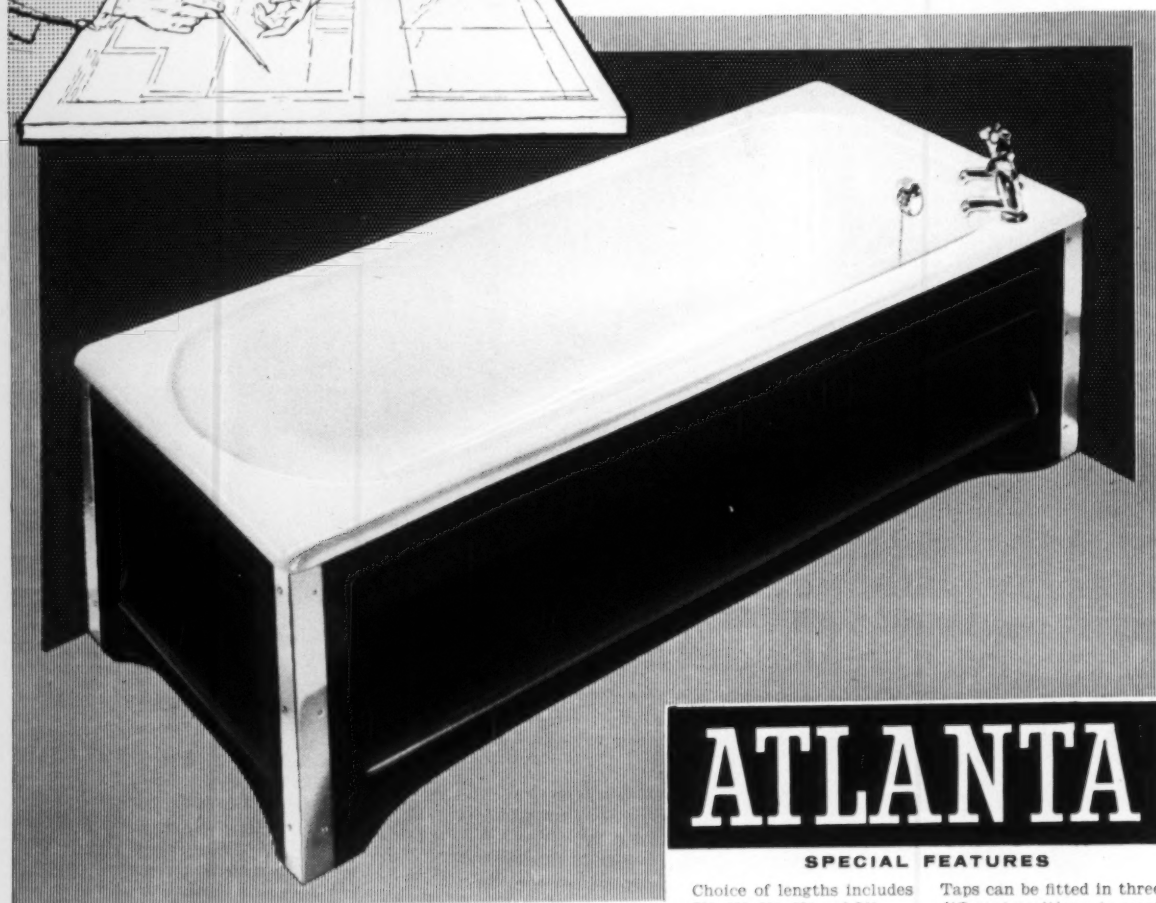
Power Tools. In addition to the hand tools listed above special Rawlplug tools are made for use in electric and pneumatic power tools. Details of these can be had on application.



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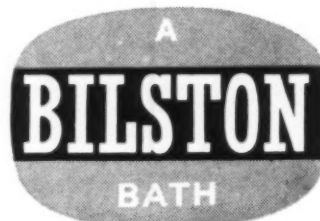
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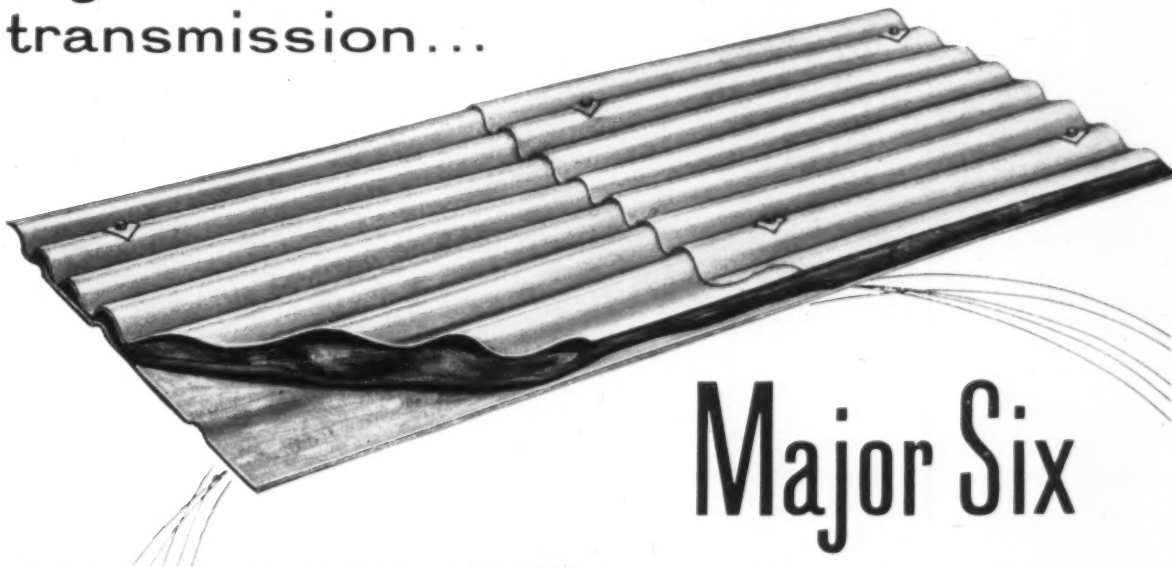
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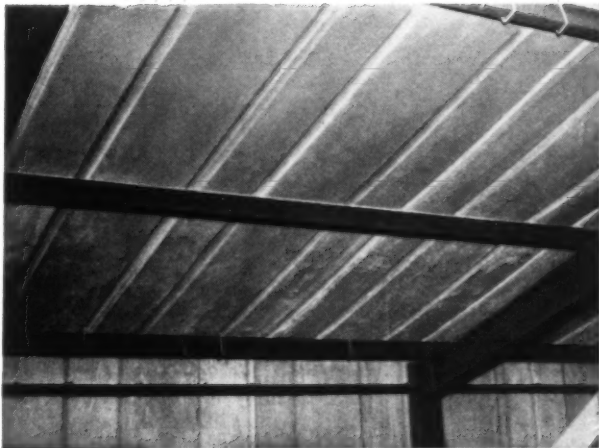


Major Six

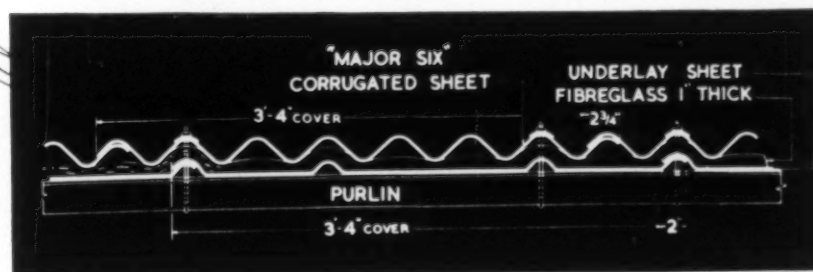
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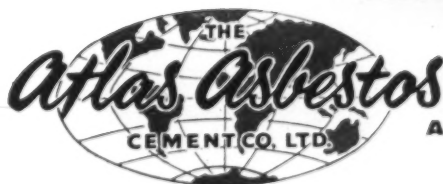
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Photograph above illustrates interior view of roof



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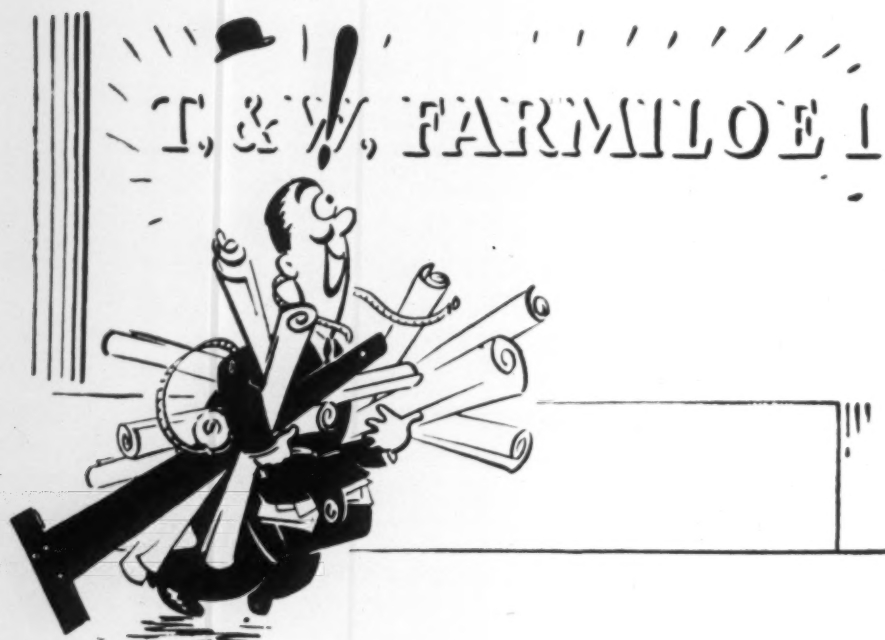


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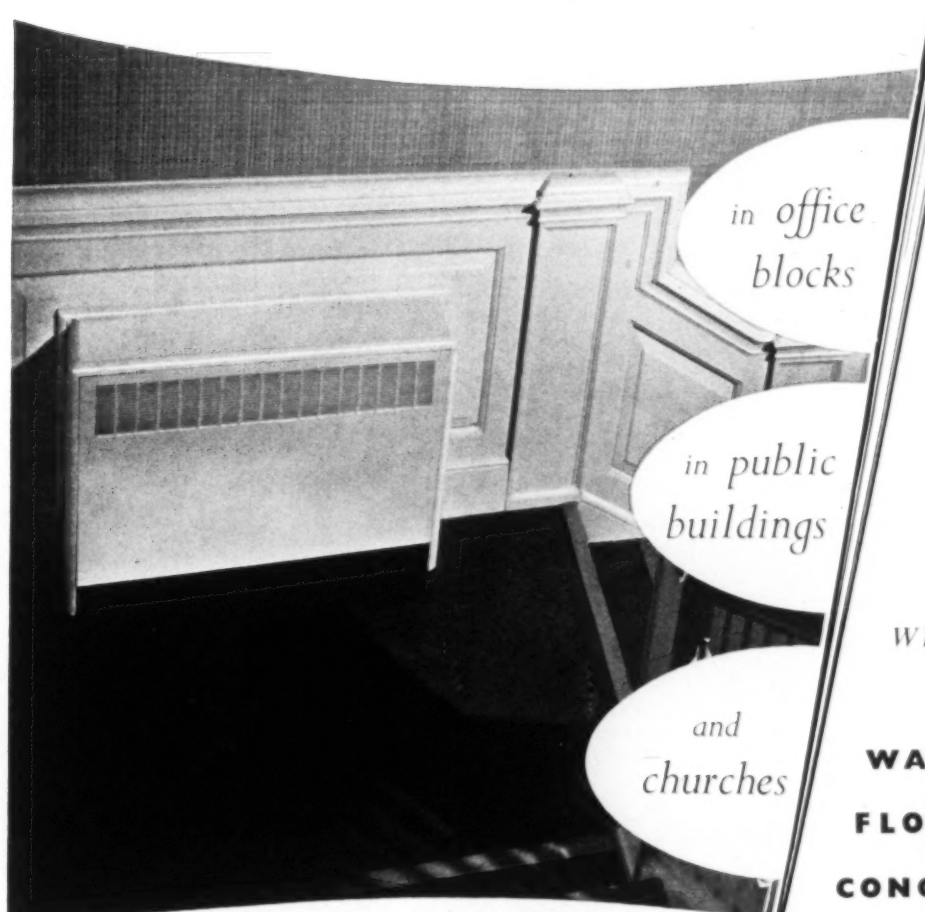
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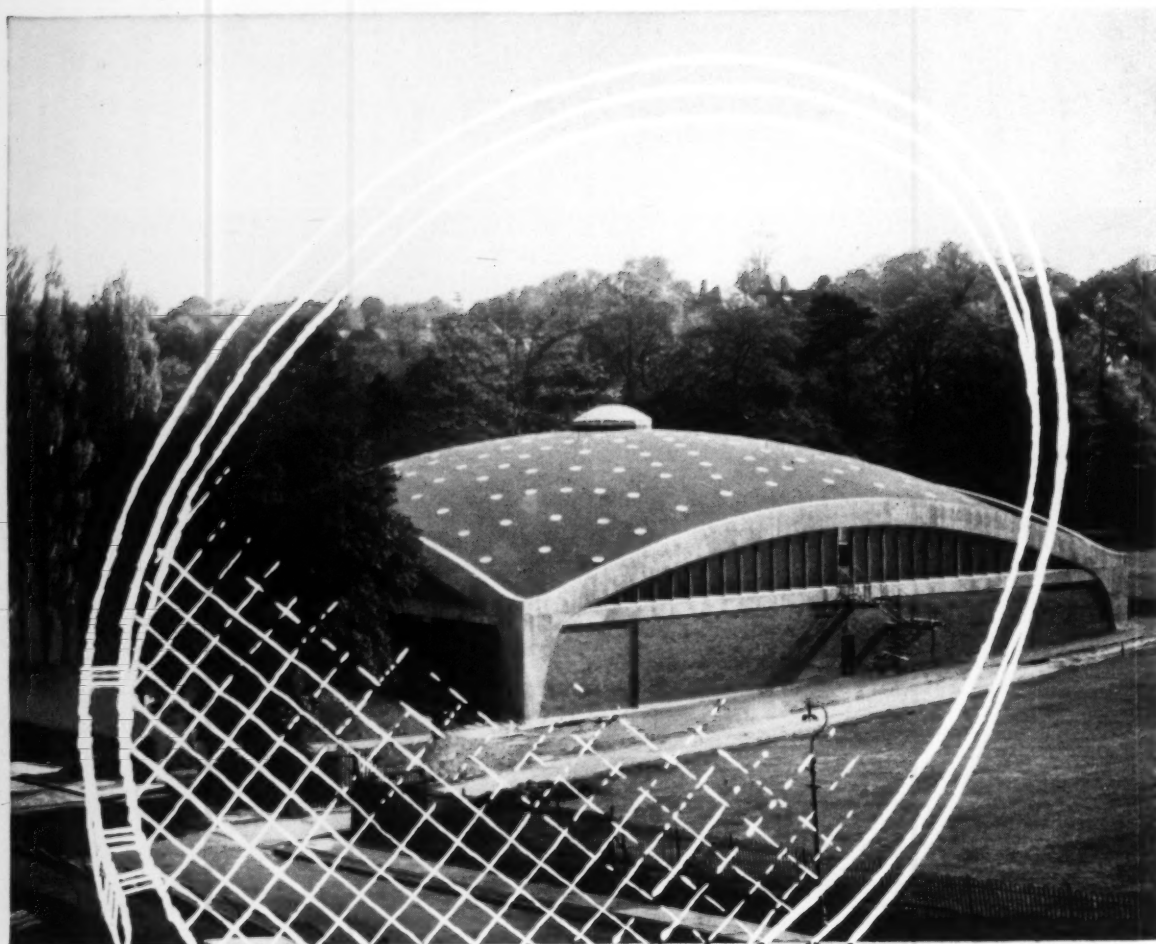
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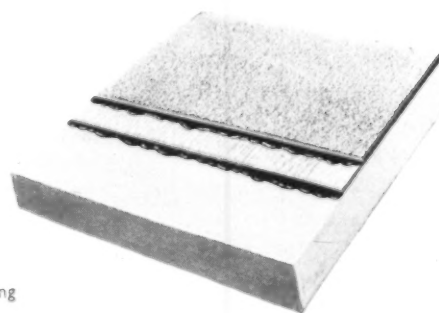




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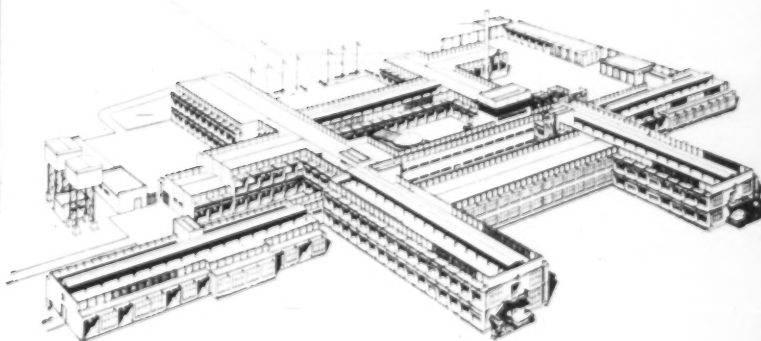
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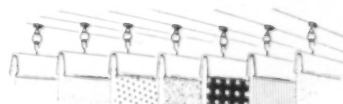
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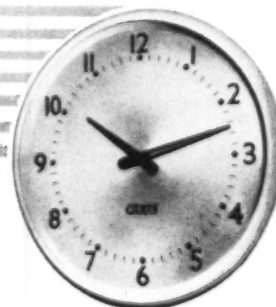
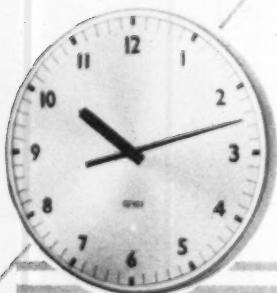
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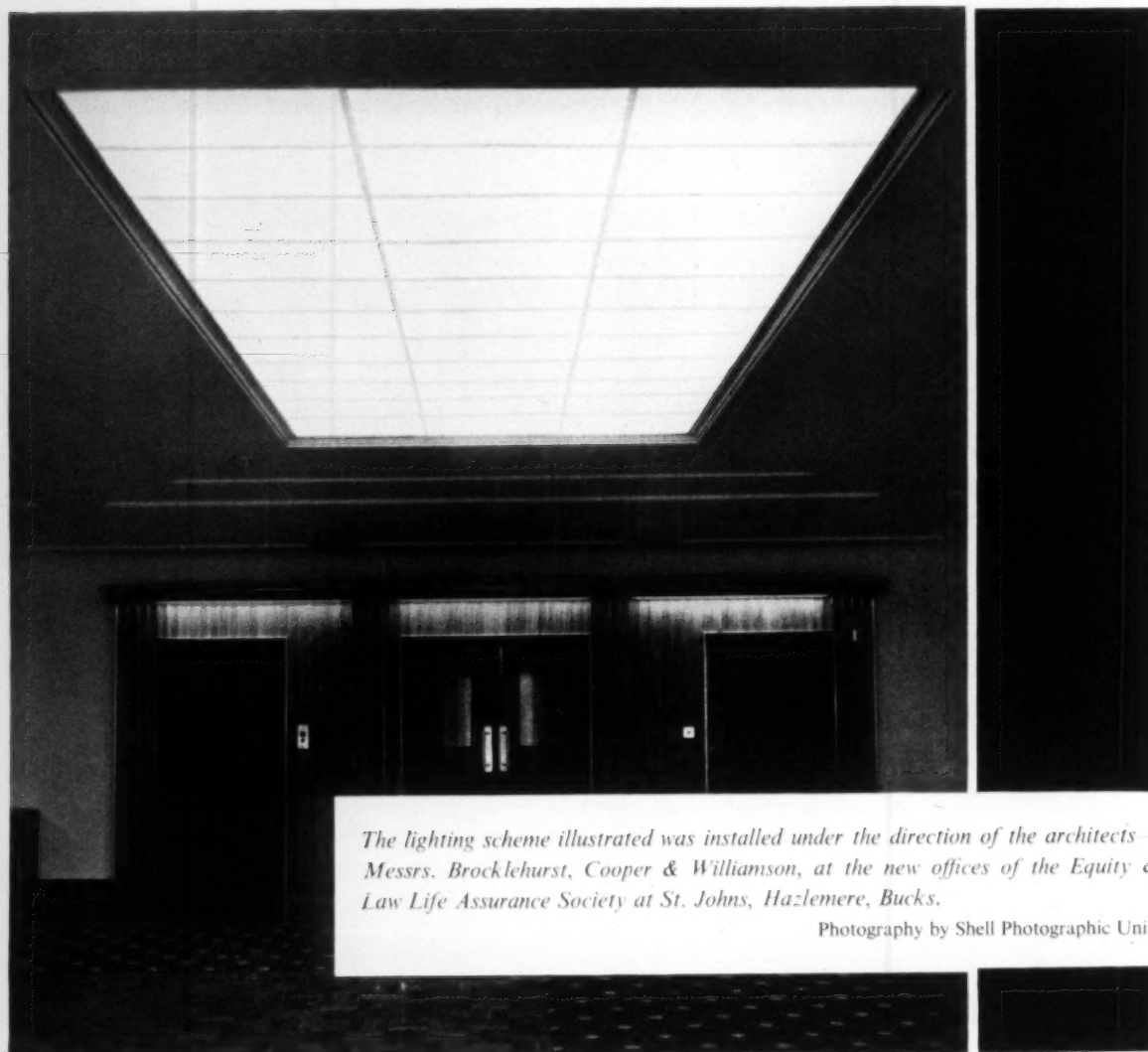
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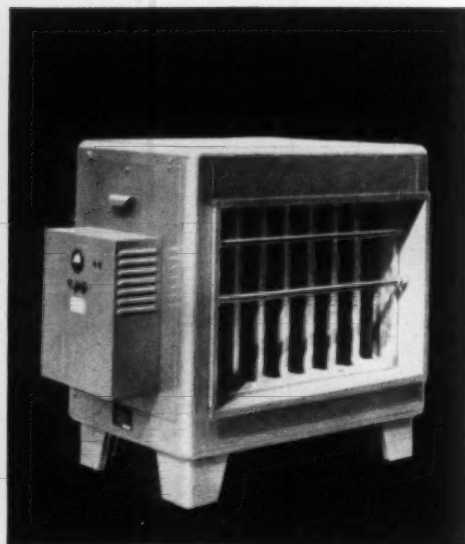
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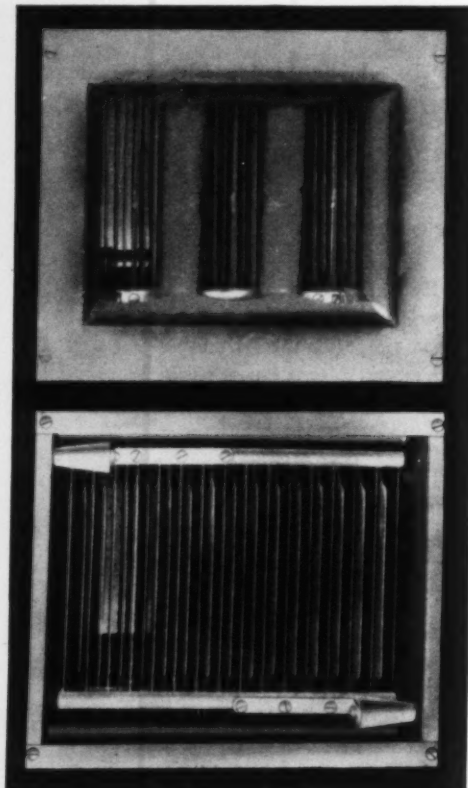
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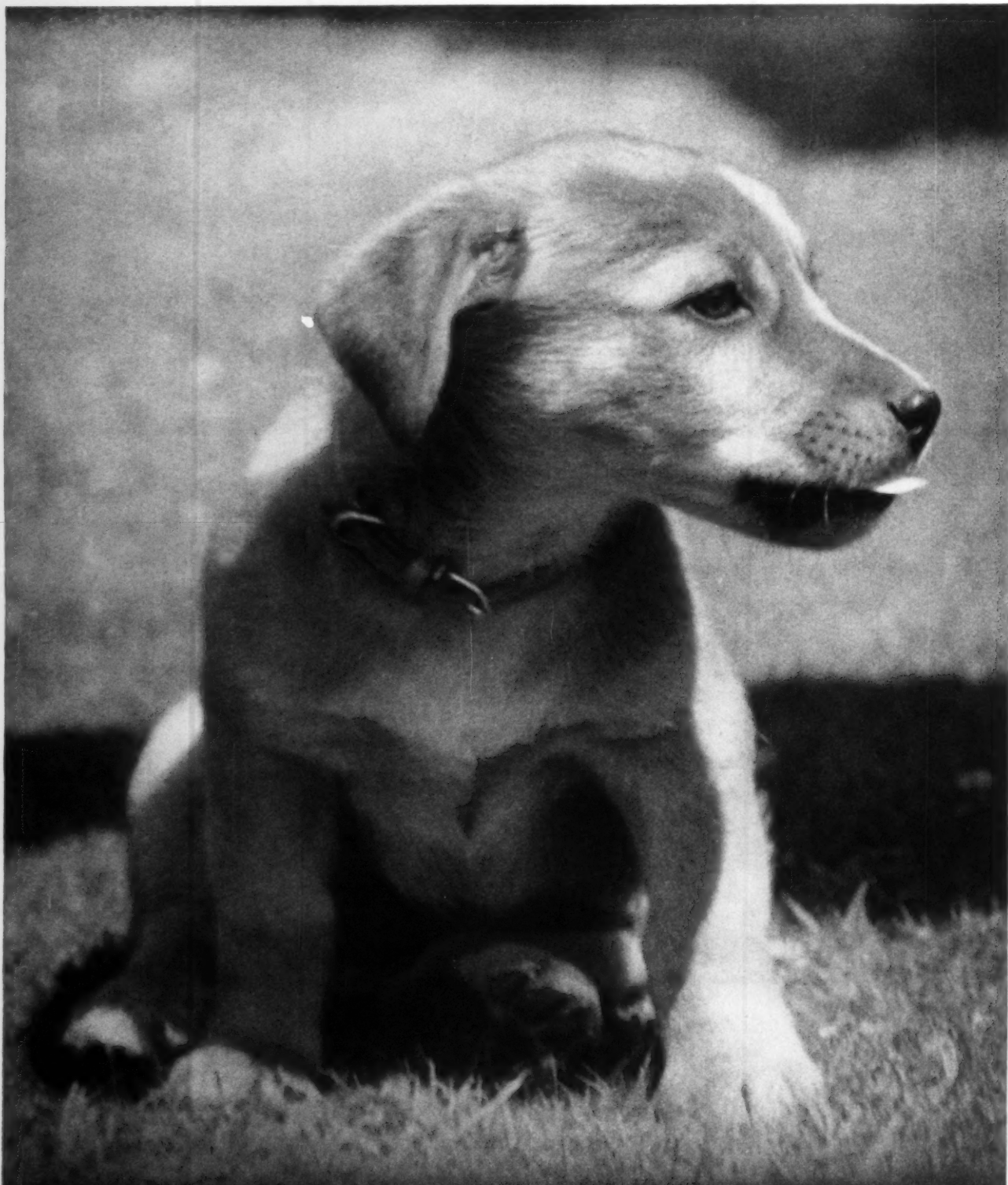
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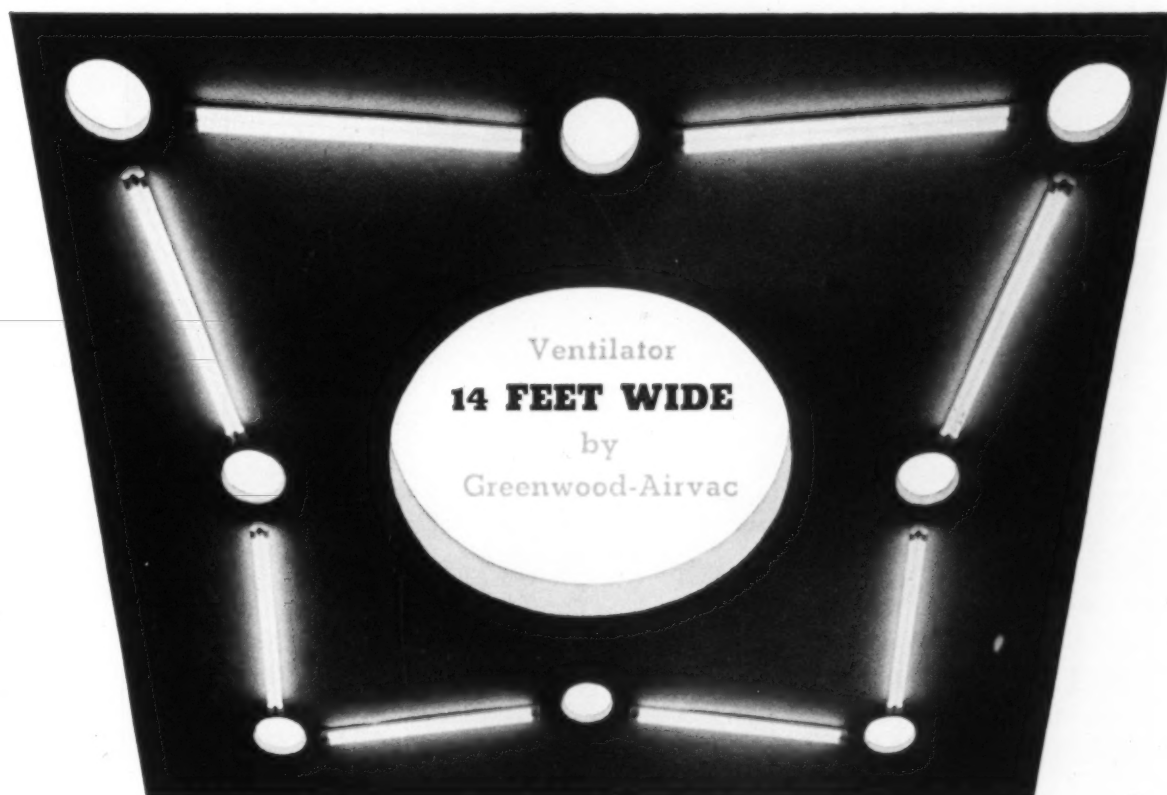
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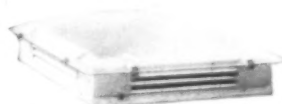
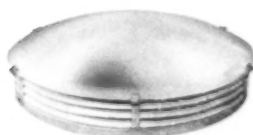
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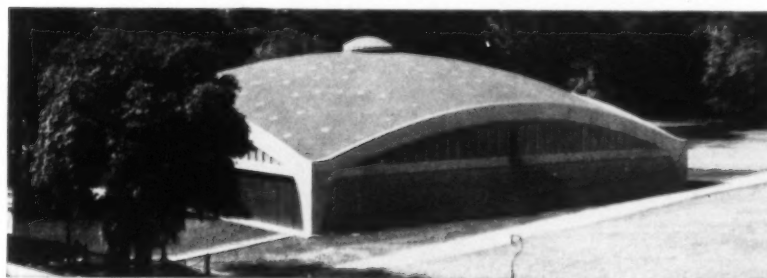
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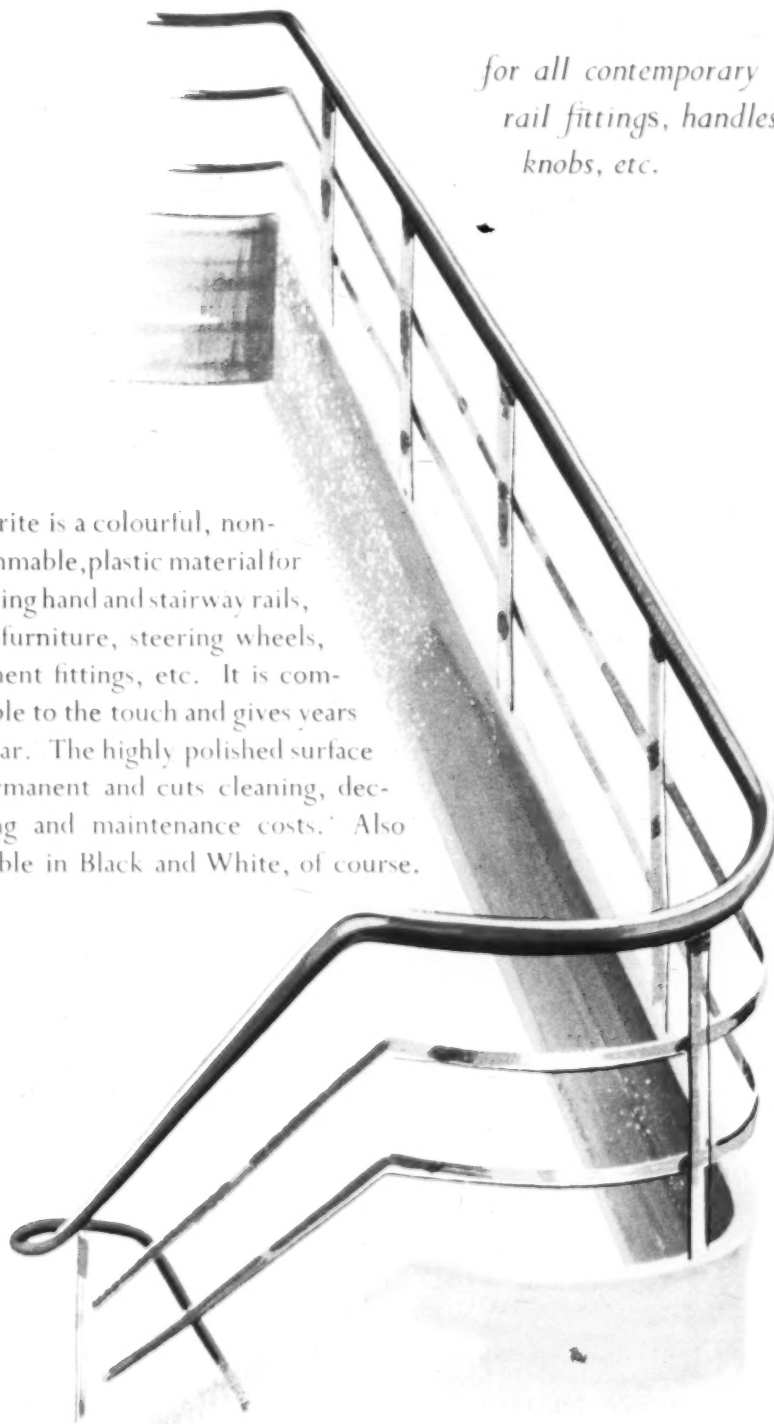
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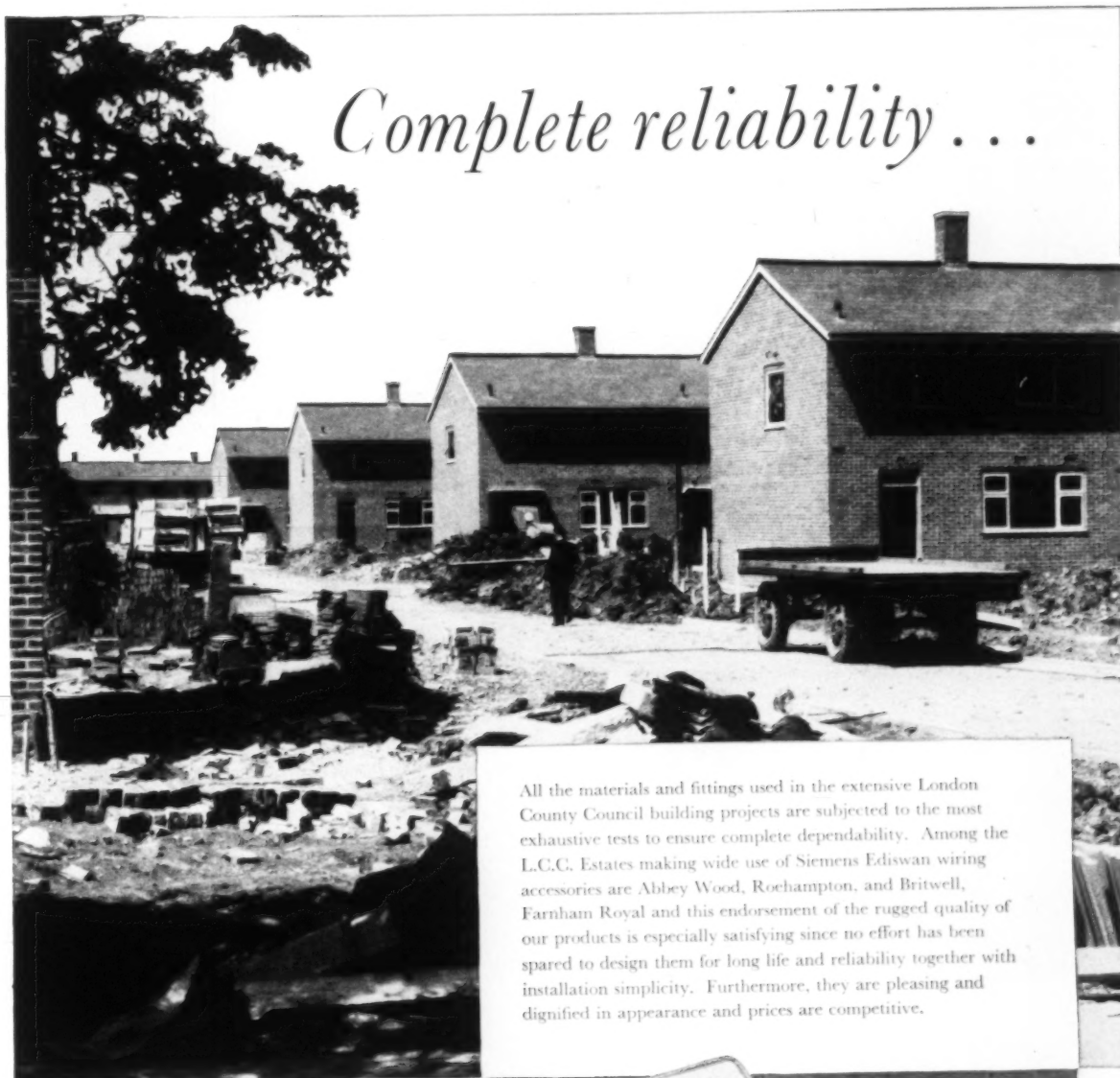
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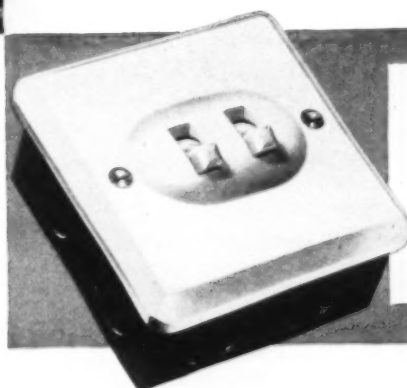
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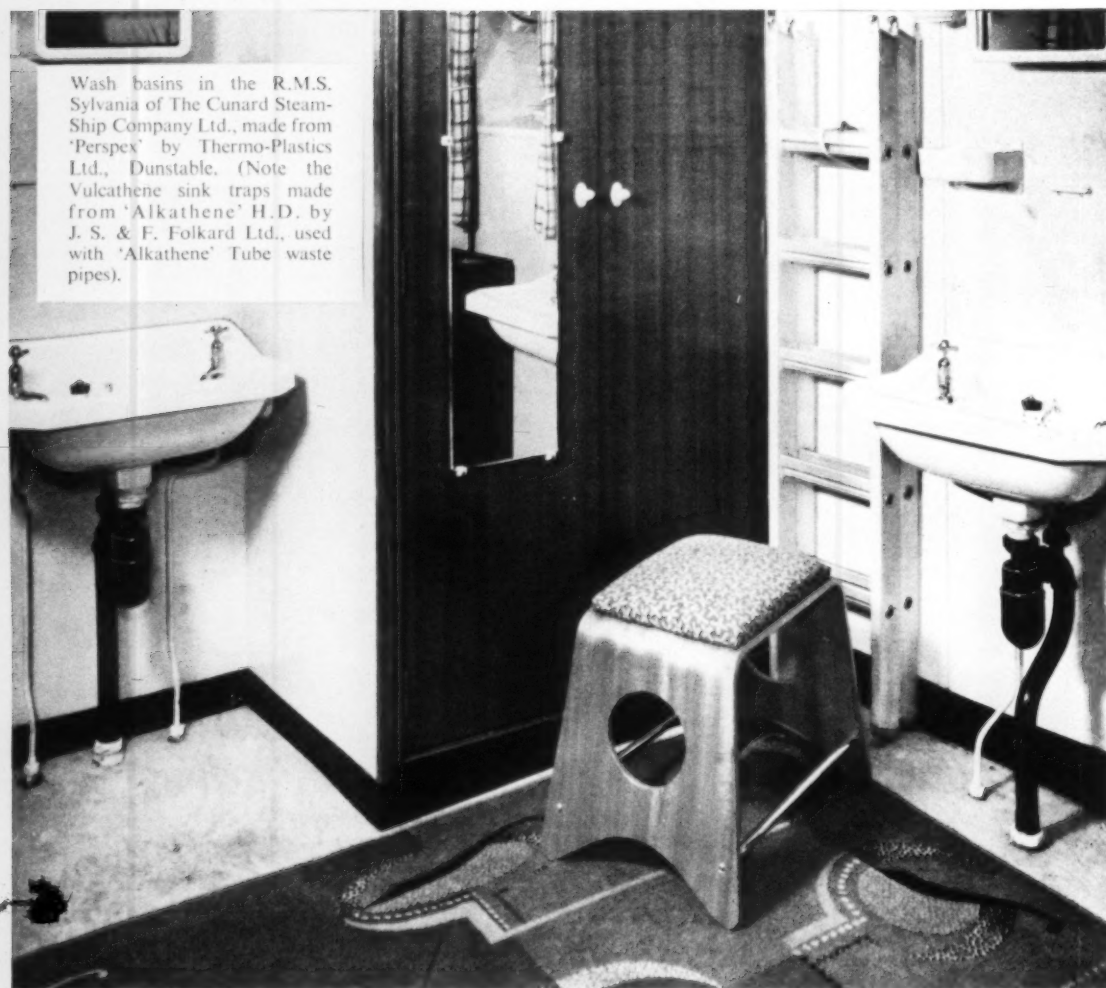


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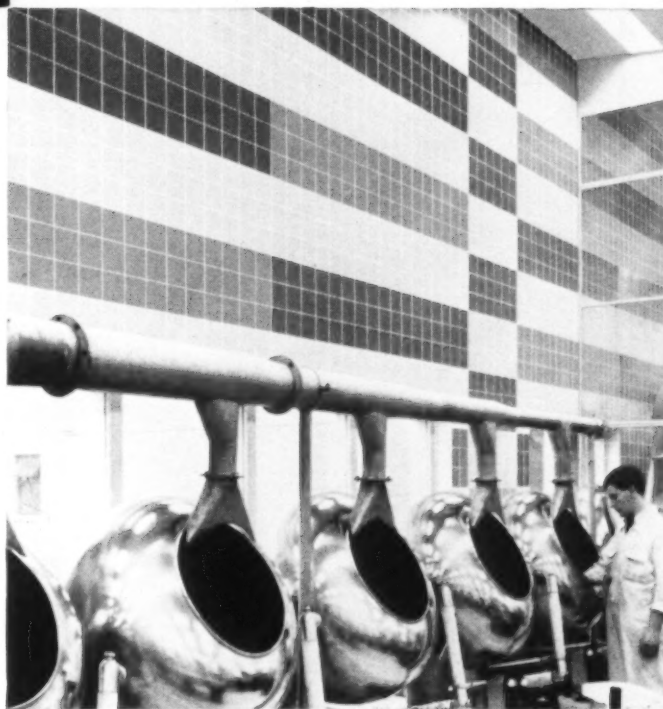
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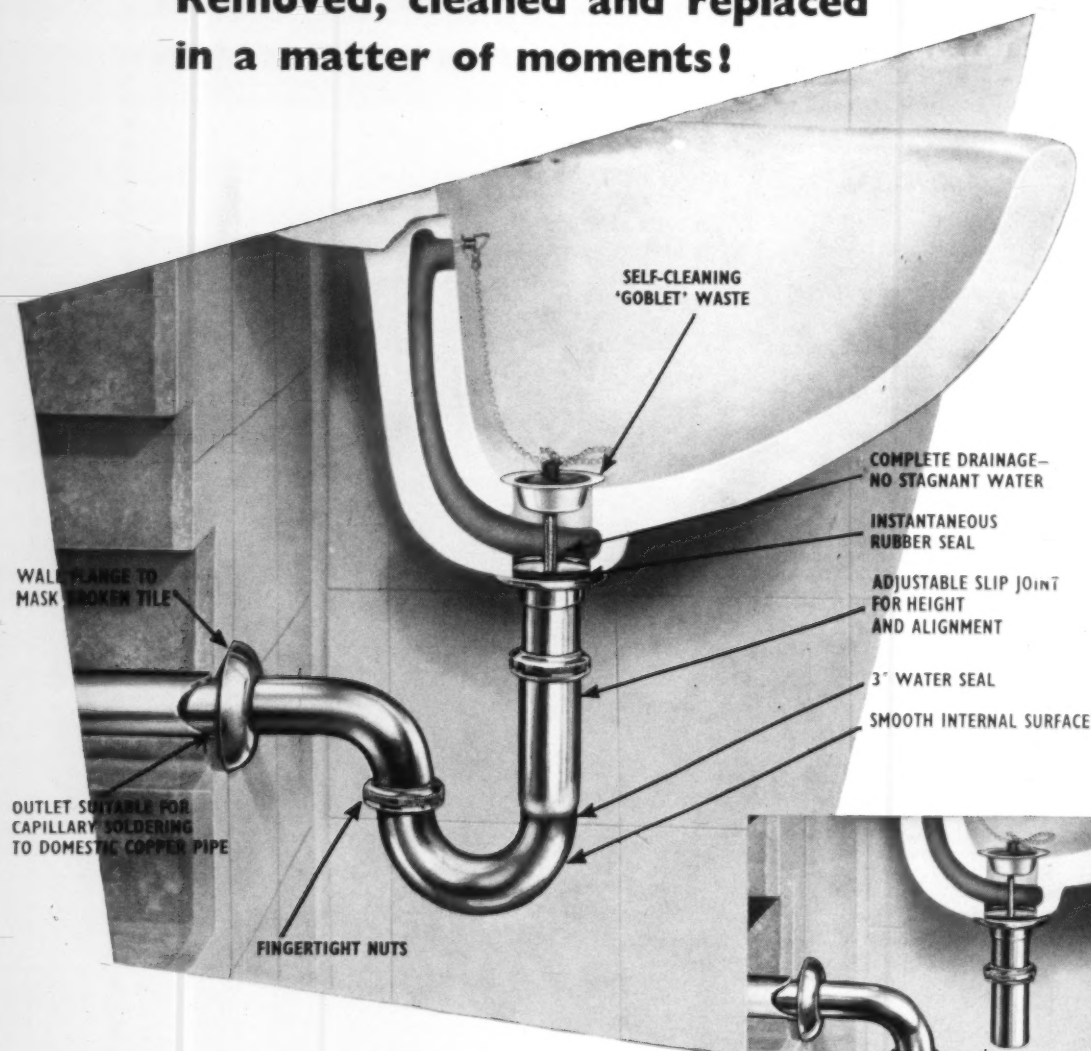
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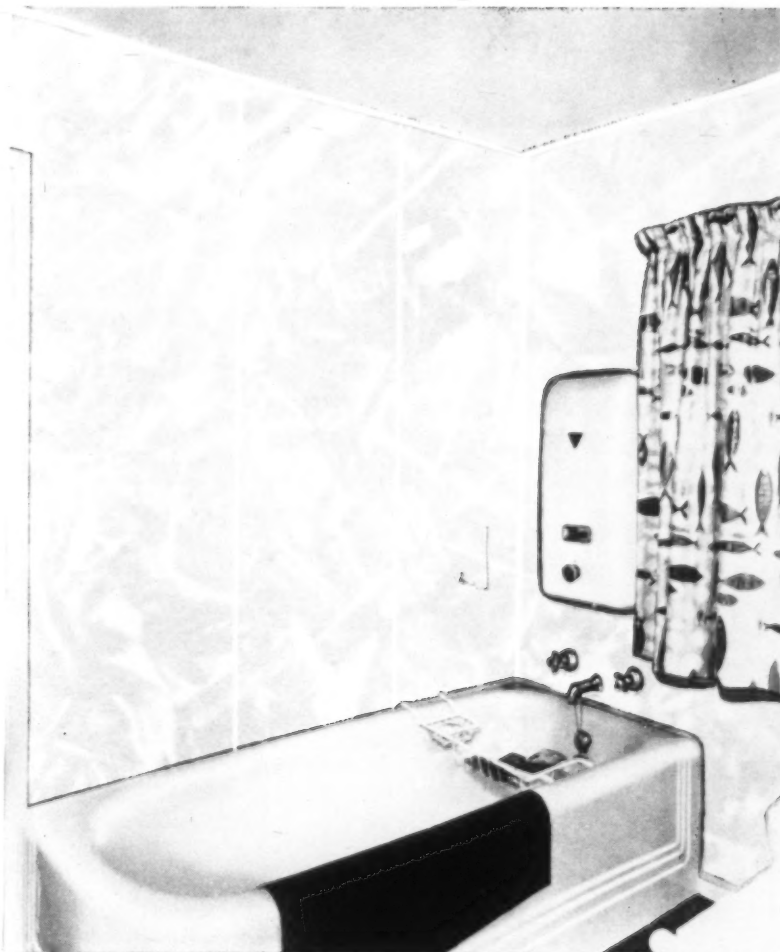
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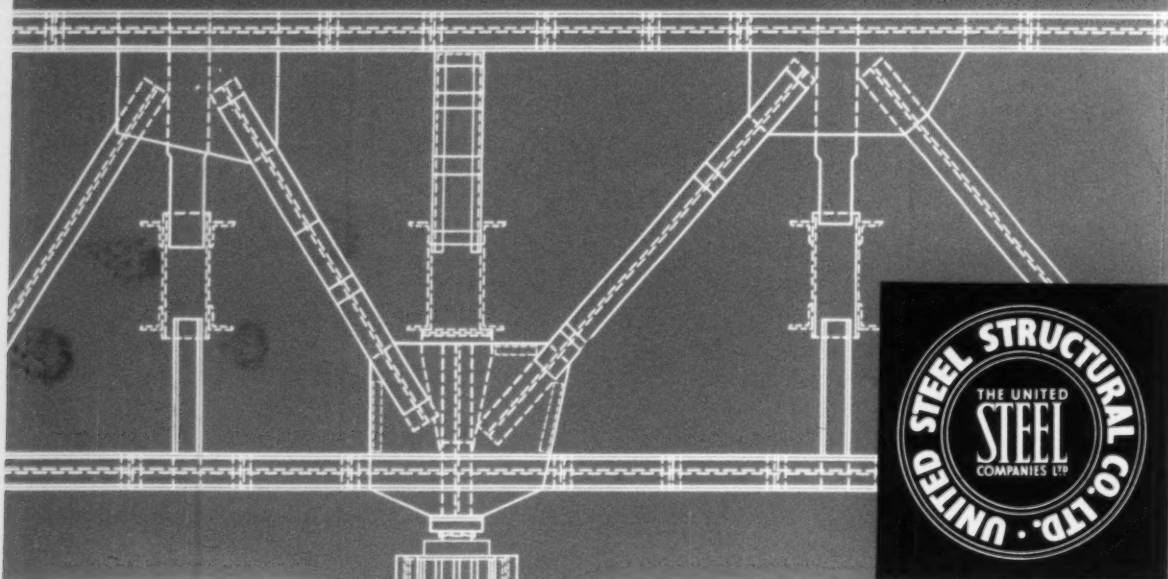
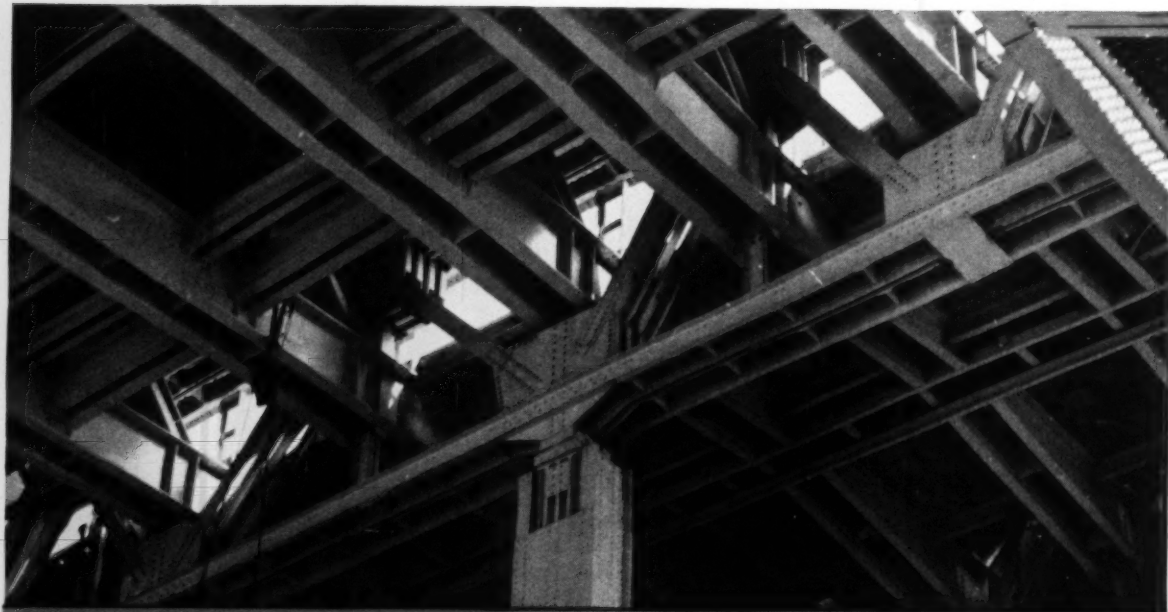


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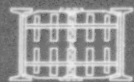


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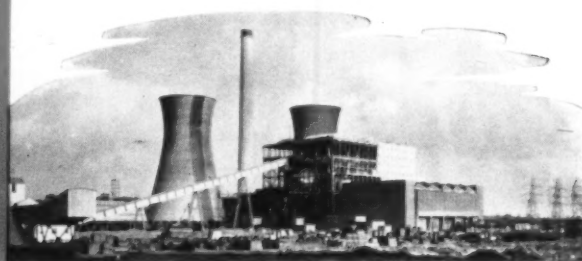
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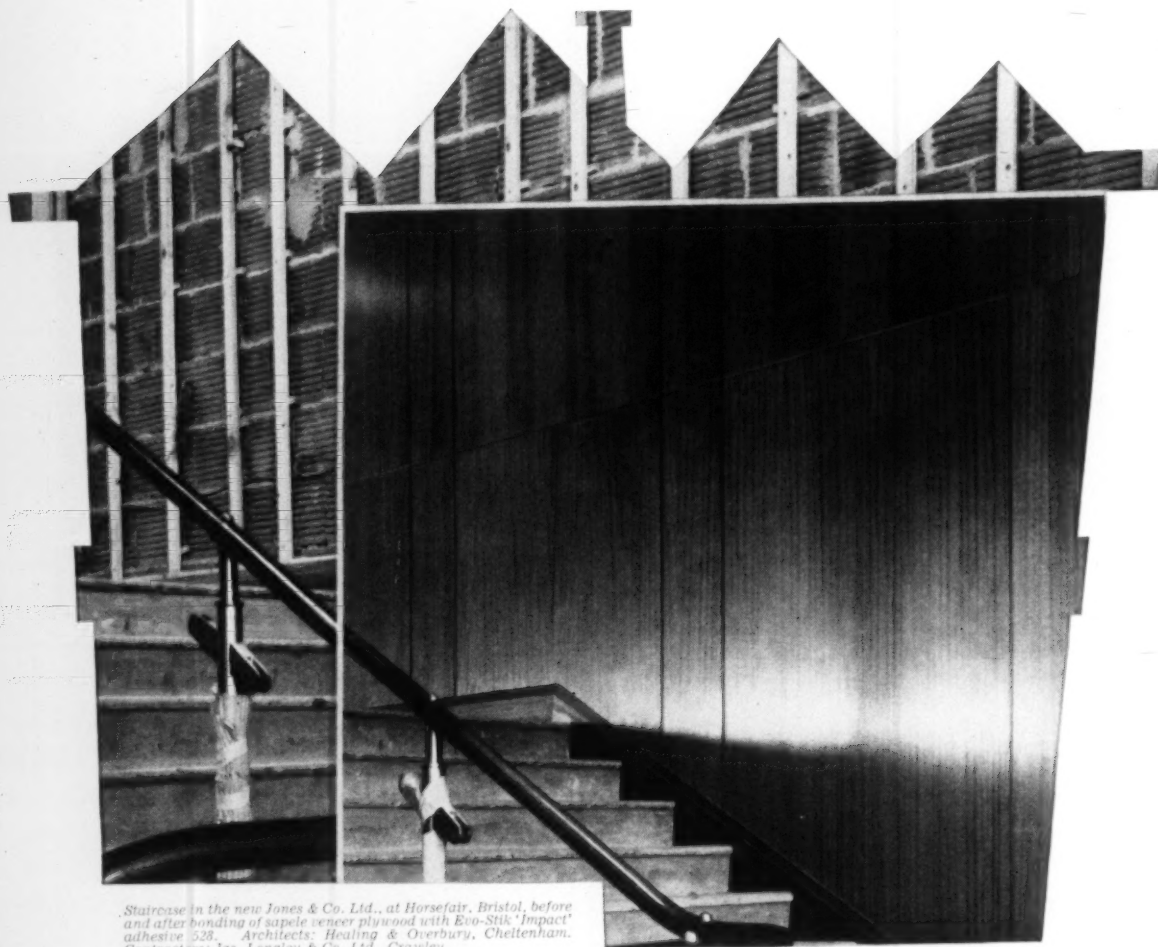
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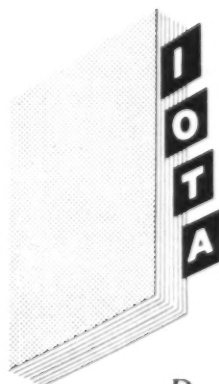
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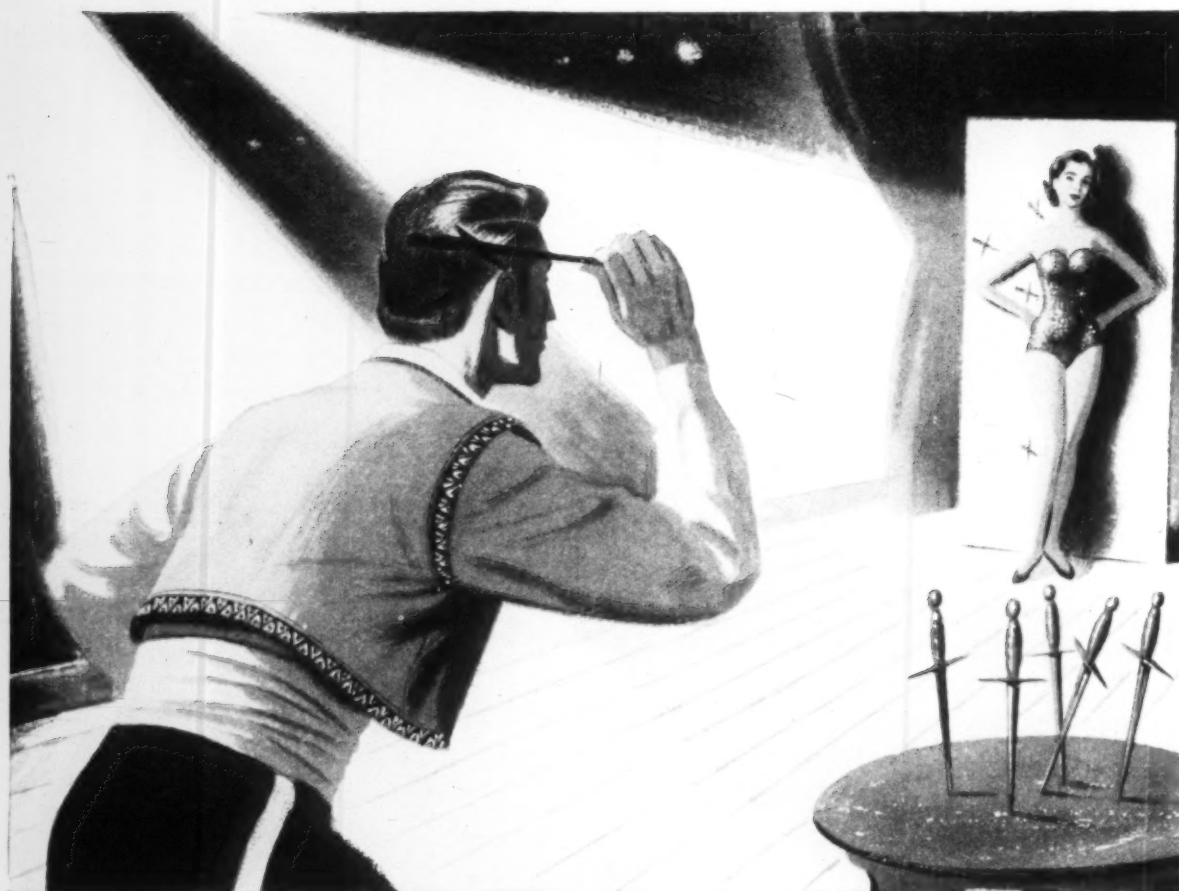


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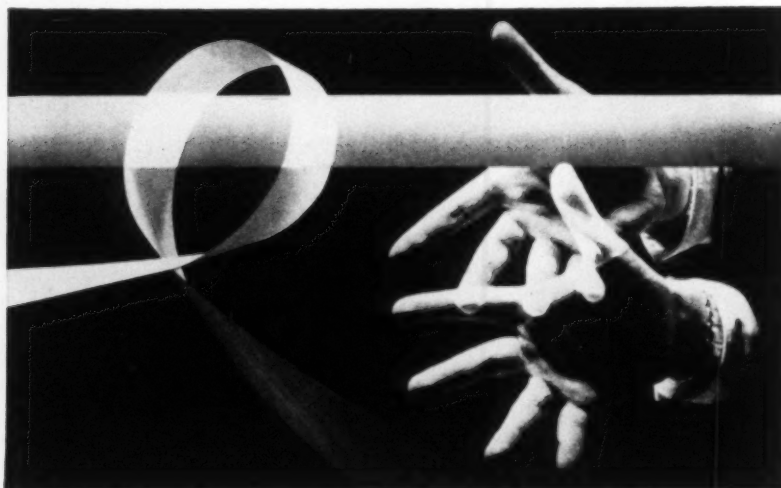
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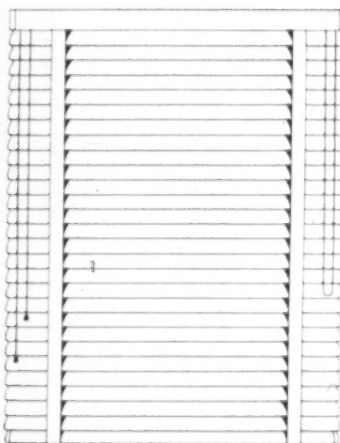
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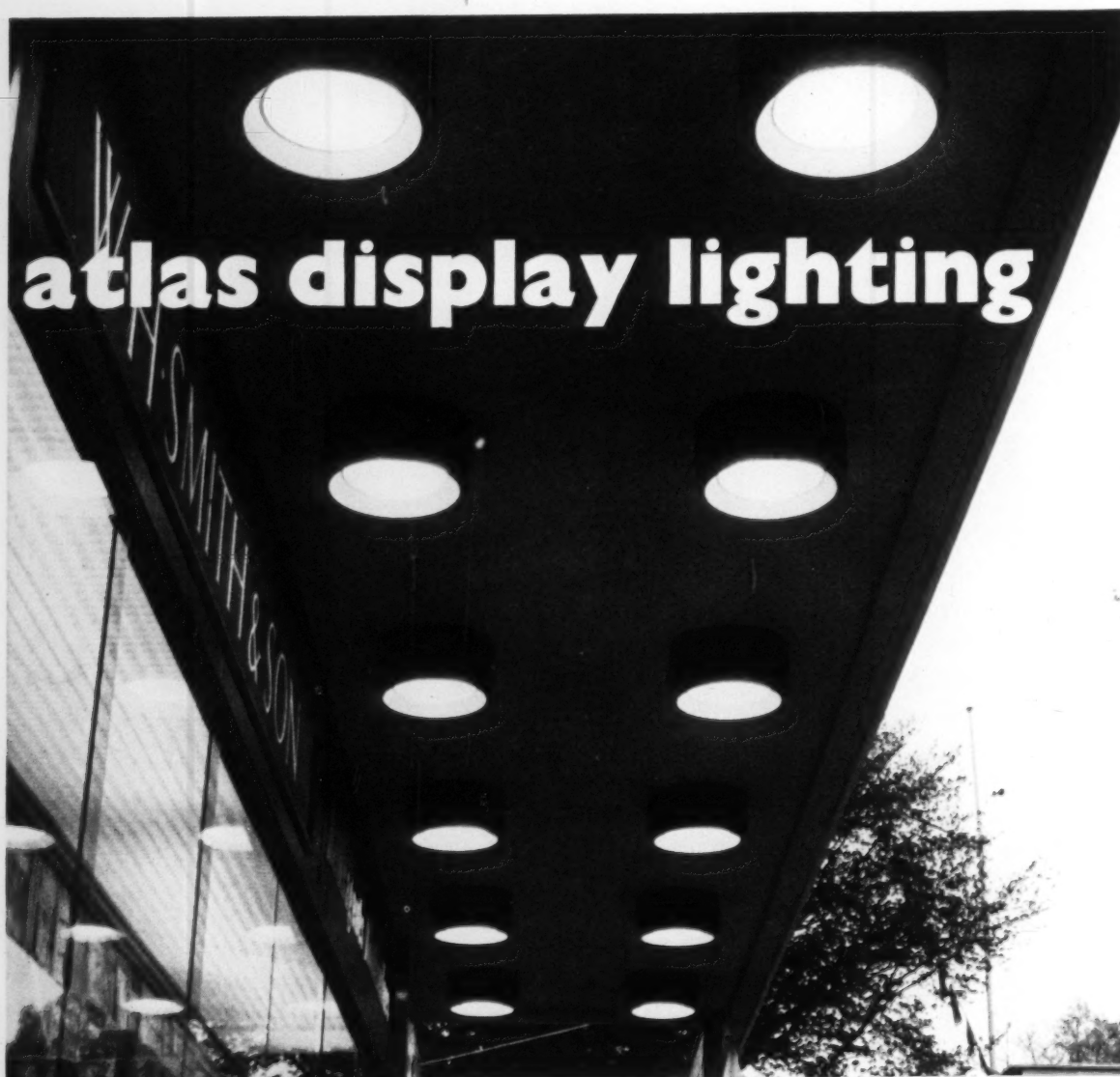
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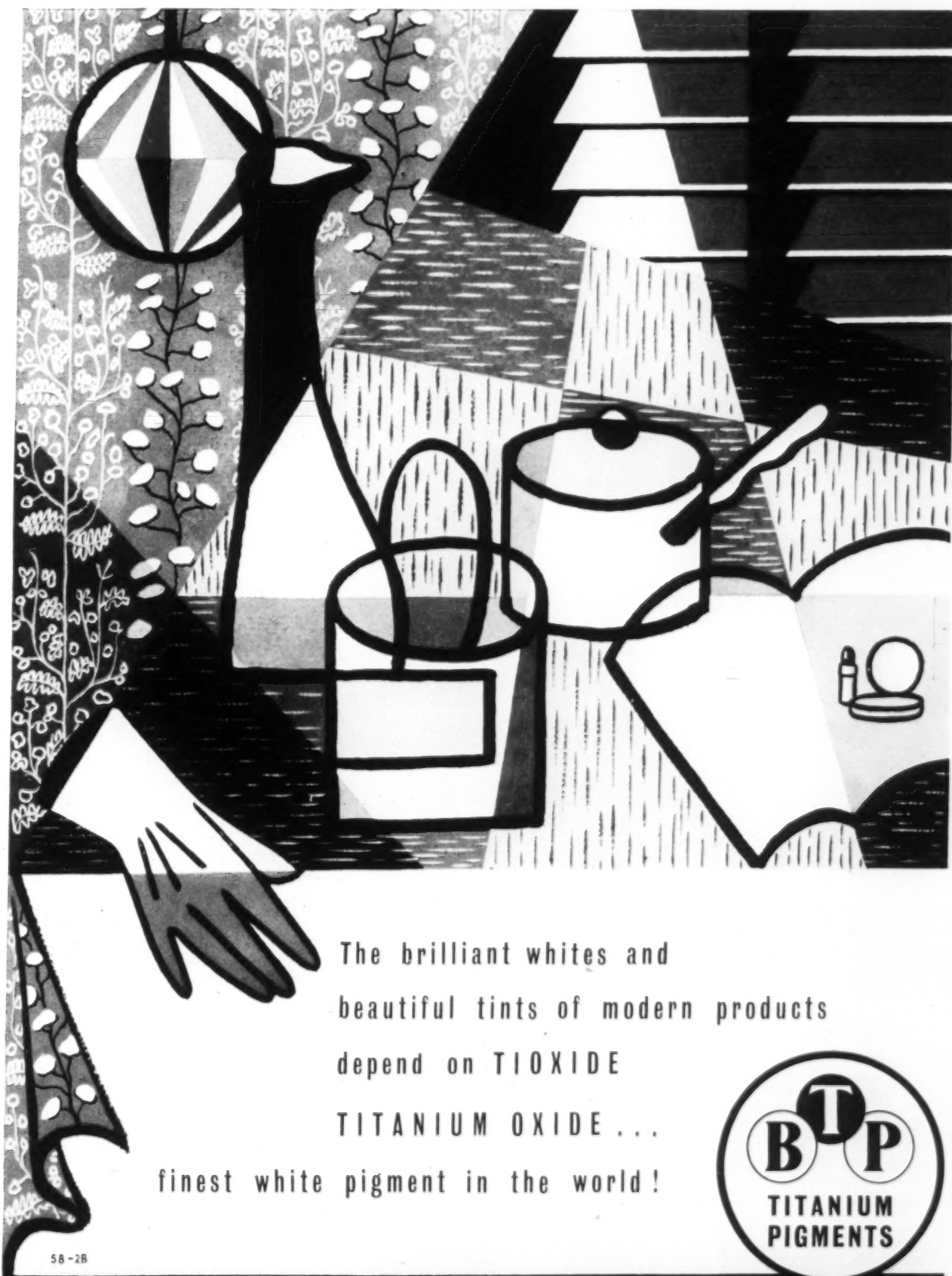


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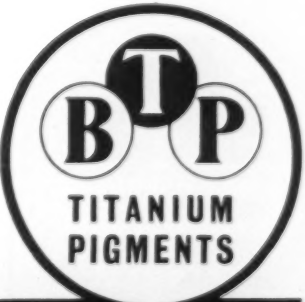
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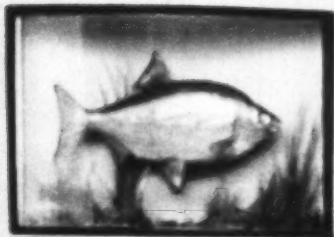
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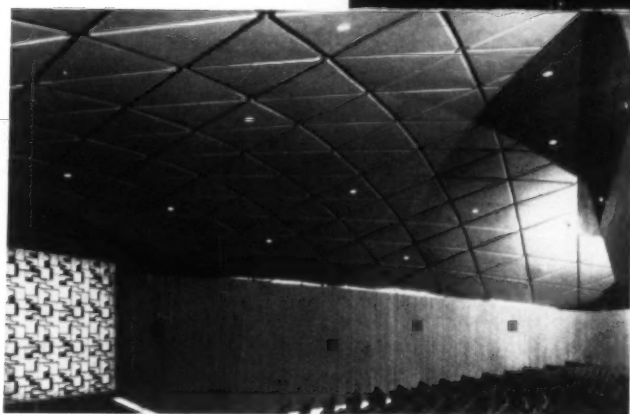
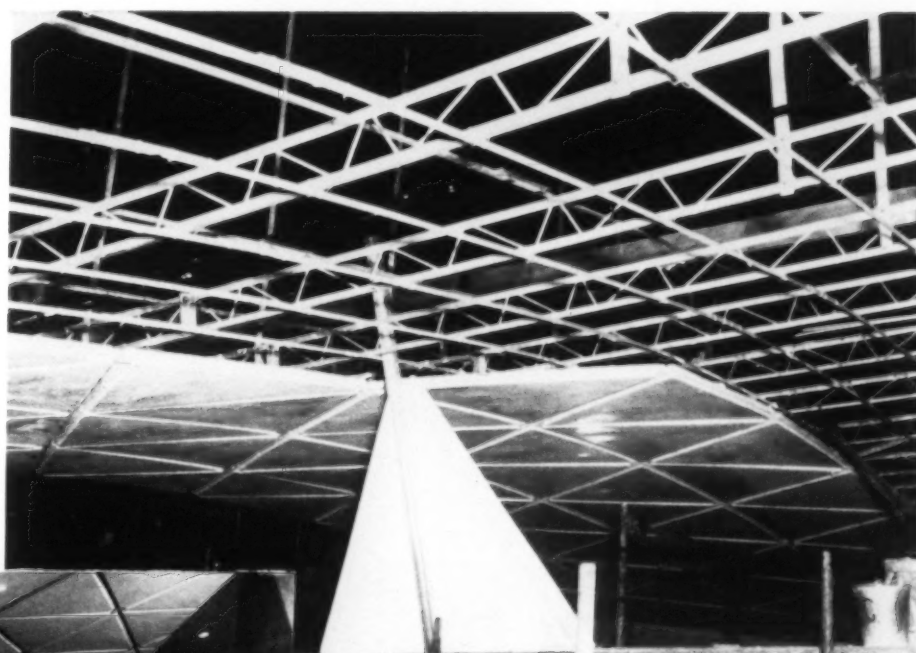
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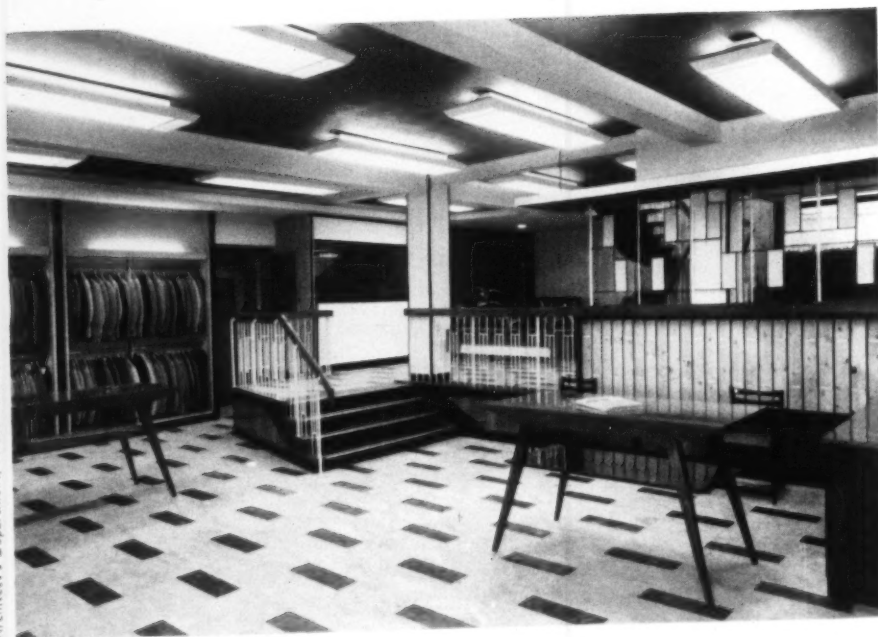
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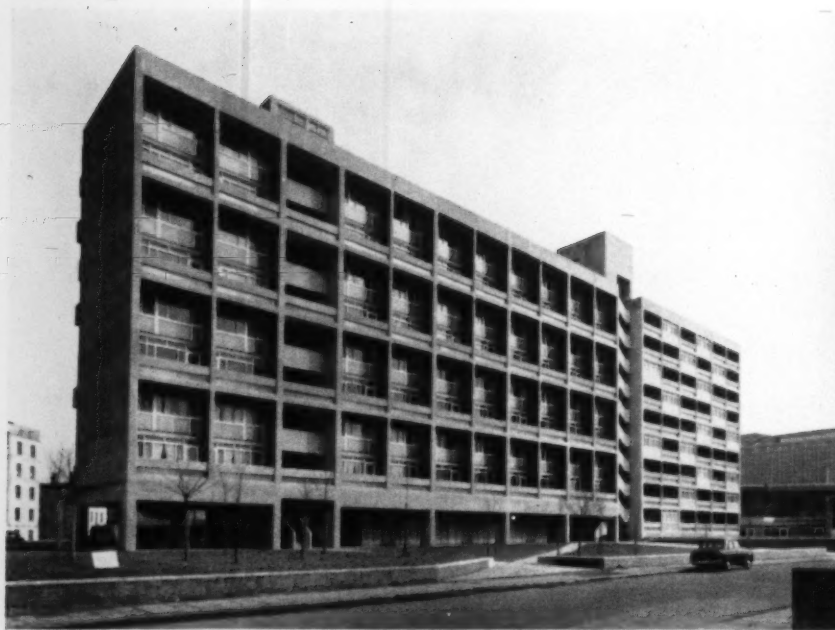
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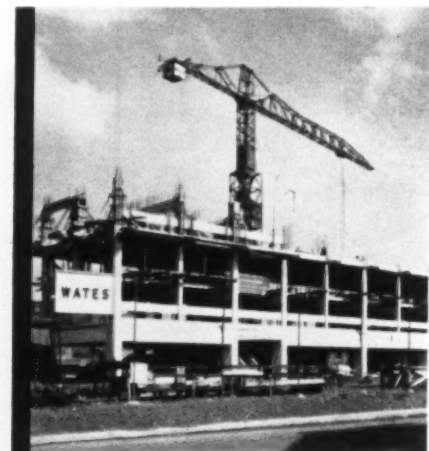
Wates save 4-months contract time on 9-storey block of flats



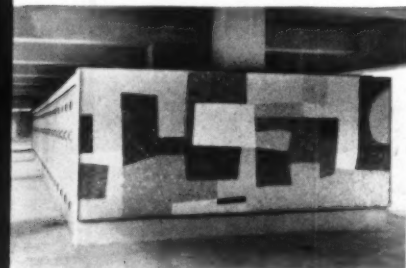
The completed 9-storey block

Thousands of railway travellers have commented on the speed at which the nine-storey block of flats at Royal Street, Lambeth (near Waterloo) has gone up. Few, however, realise that the 20-month contract time was cut by as much as 20 per cent and probably fewer realise how this was done. These are the reasons:

- ★ Enthusiastic pre-contract collaboration between Wates, architect Leslie G. Creed, F.R.I.B.A., A.M.T.P.I., and consulting engineers Felix J. Samuels & Partners, which reduced site work to an absolute minimum.
- ★ Modern constructional methods backed by an organisation with a wealth of experience in this highly specialised work.
- ★ Tight but not impossible targets were set, and not only achieved, but in many cases beaten.



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Mosaic mural by Malcolm Hughes

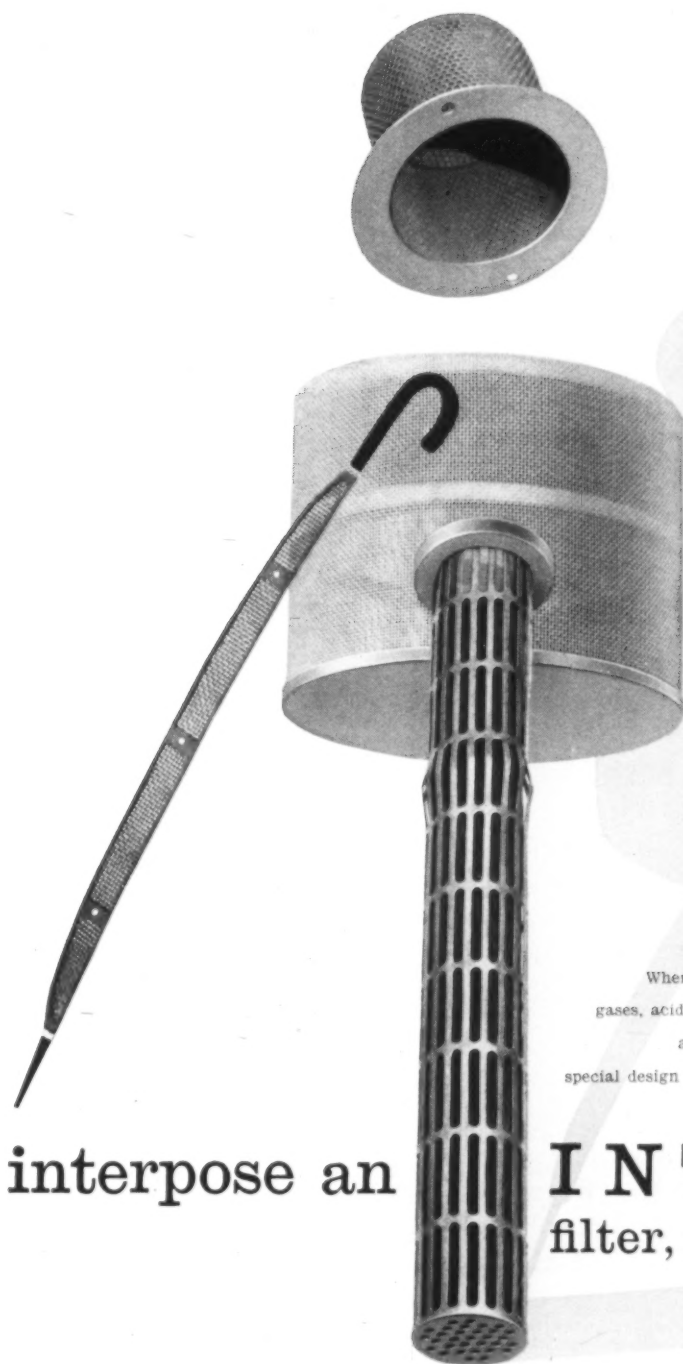
Close to Waterloo Station, the new building is set in a carefully planned landscape area. Externally two bold contrasting colours have been used — blue vertically, pink horizontally. The building is nine storeys high; and provides accommodation for 280 people with a density of 136 to the acre. It comprises 40 two-bedroom maisonettes of 770 sq. ft., 17 three-bedroom flats of 850 sq. ft., and 20 one-bedroom flats of 410 sq. ft.



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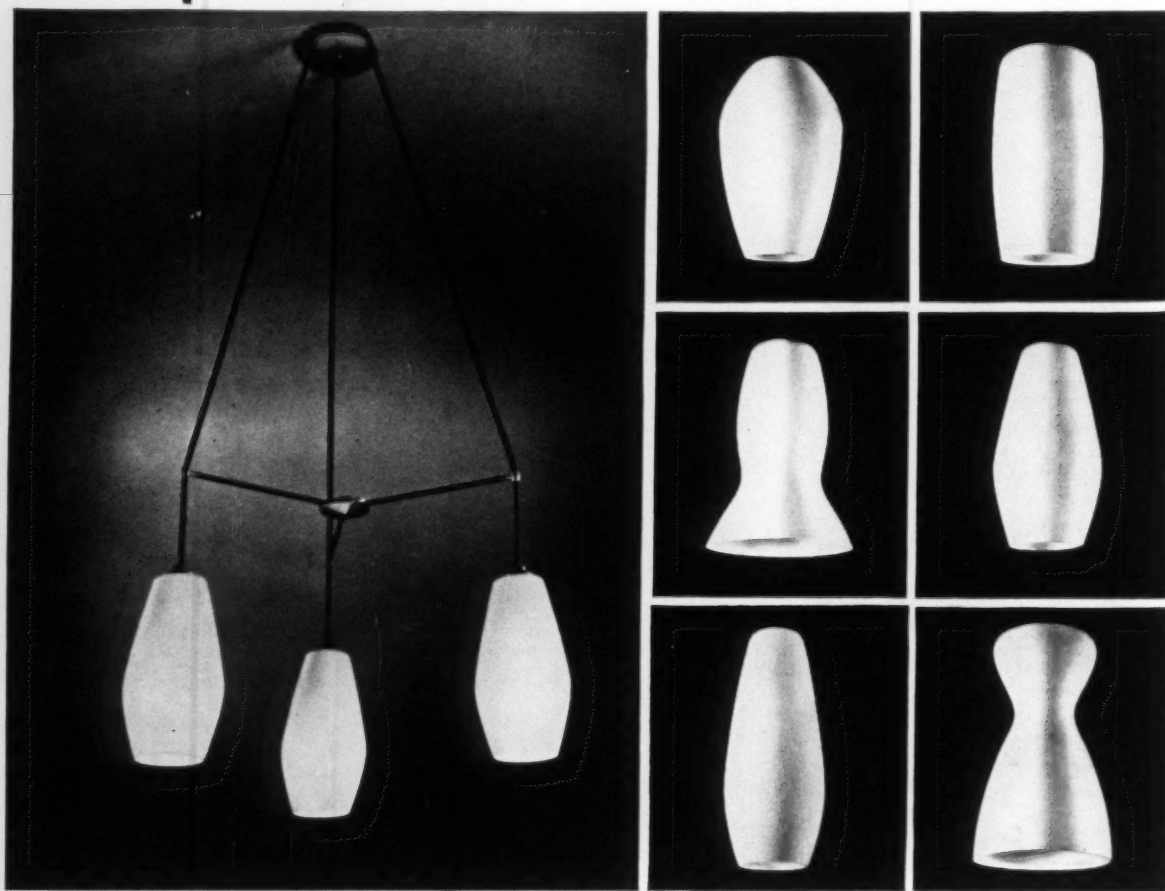
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Photograph by A. F. Kersting.

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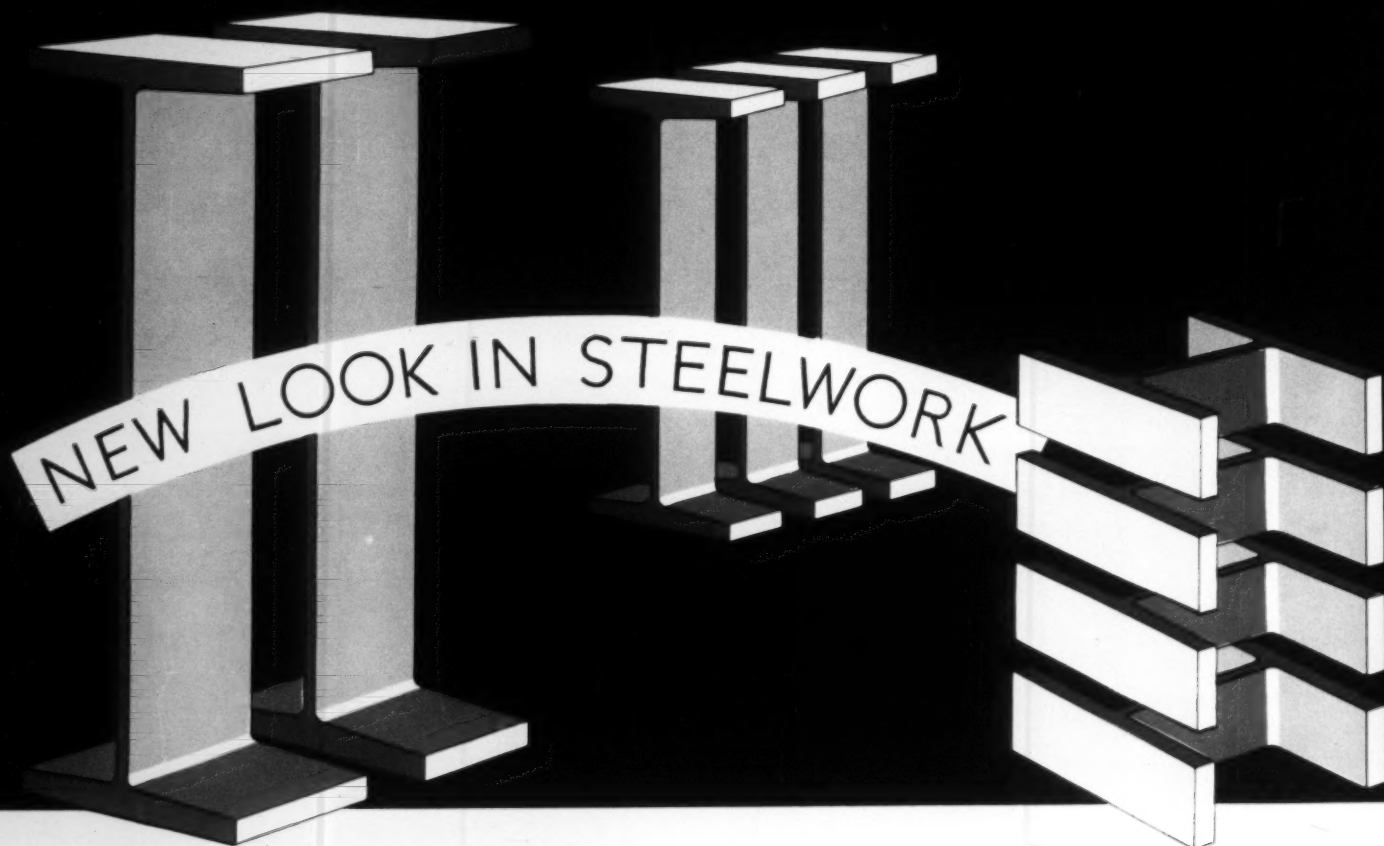
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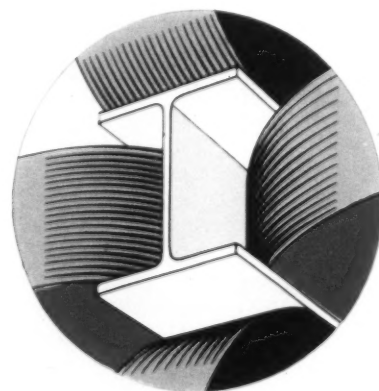
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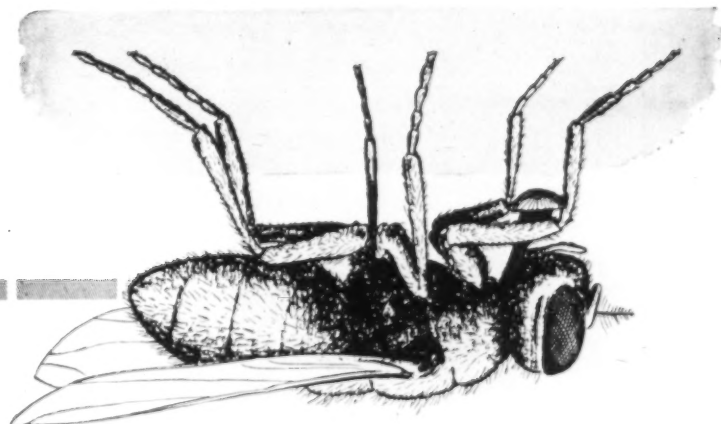
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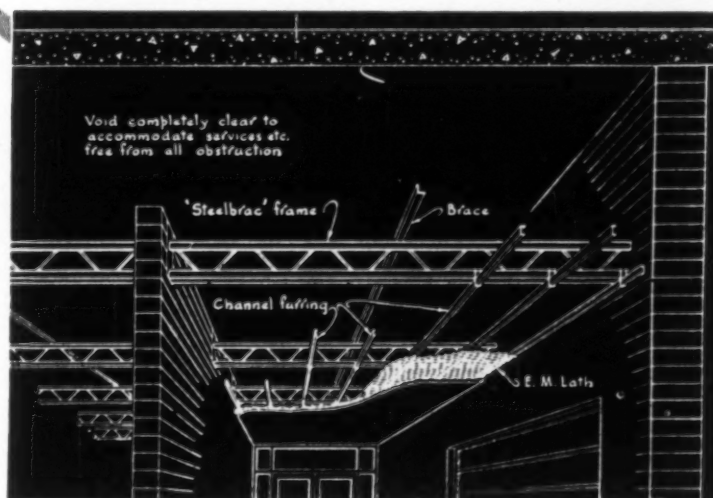


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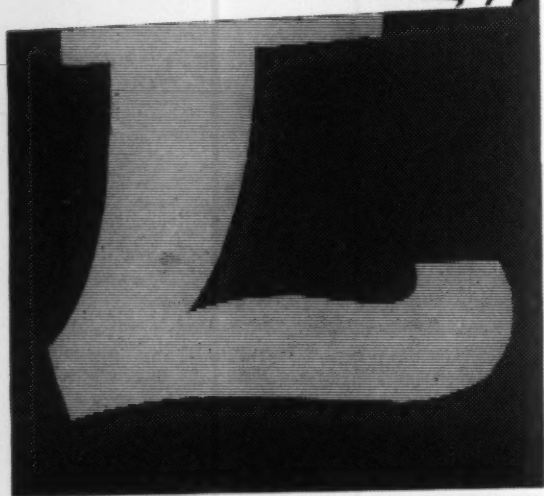
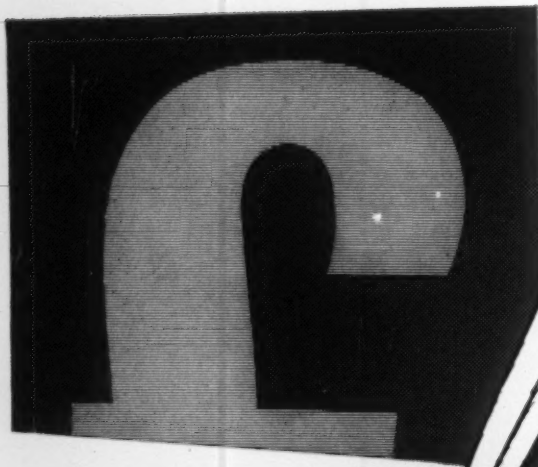
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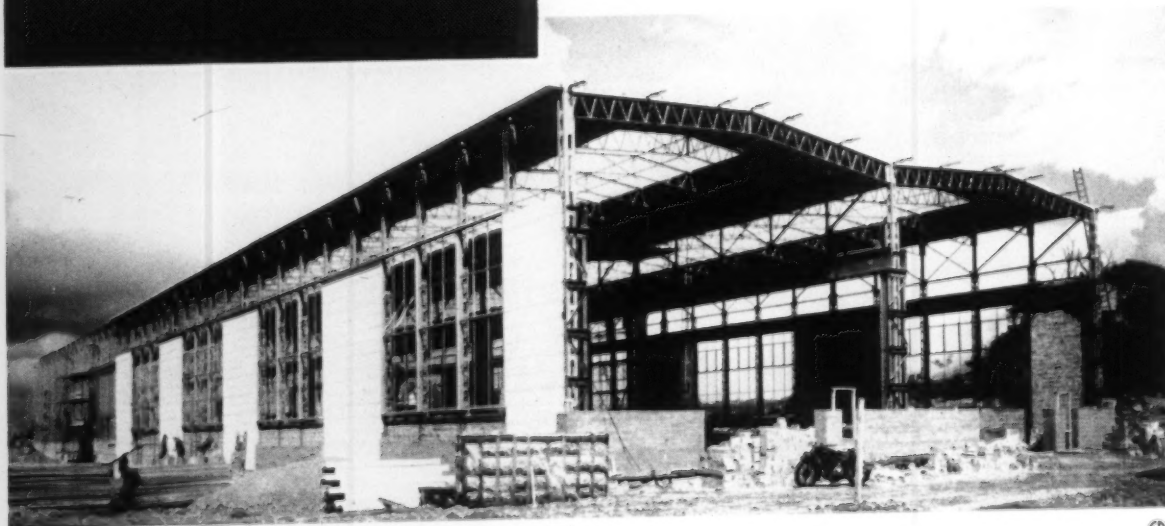


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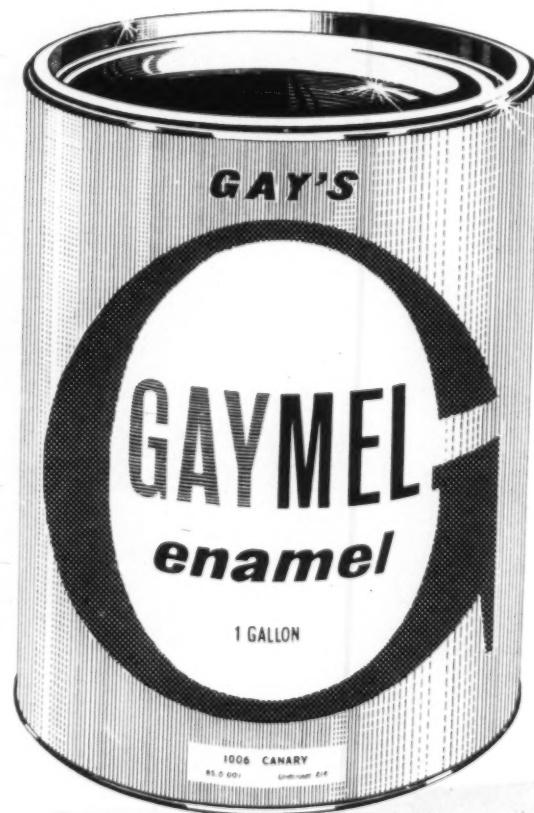
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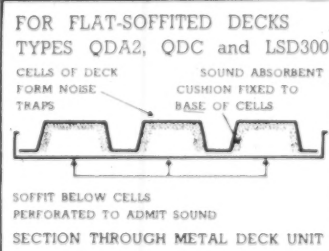
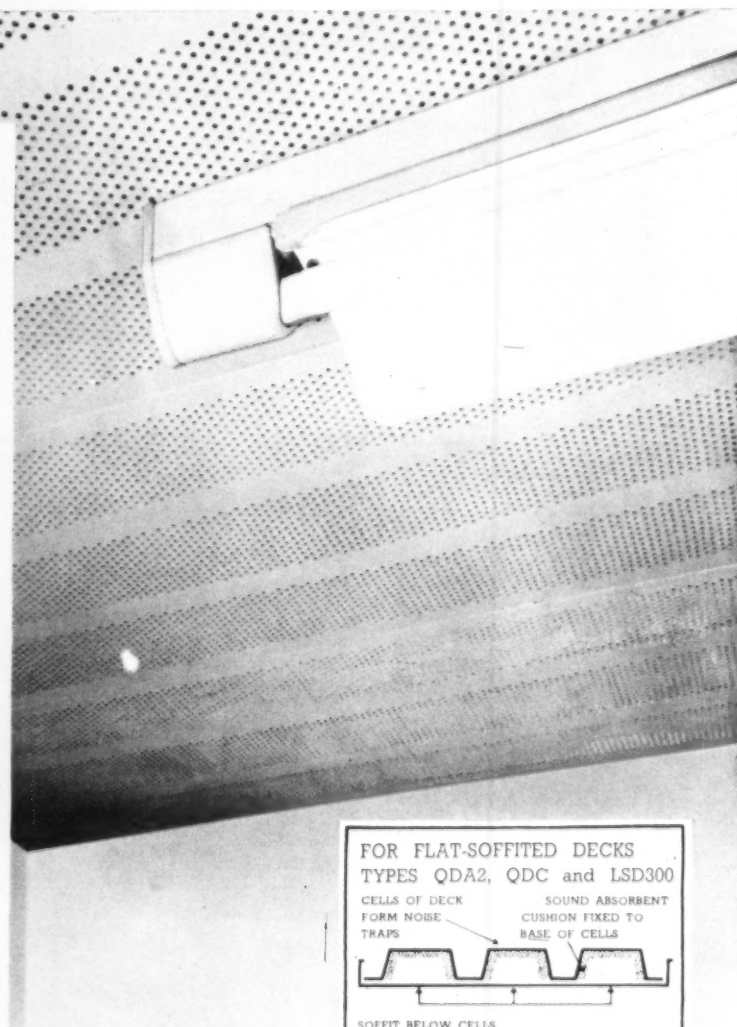
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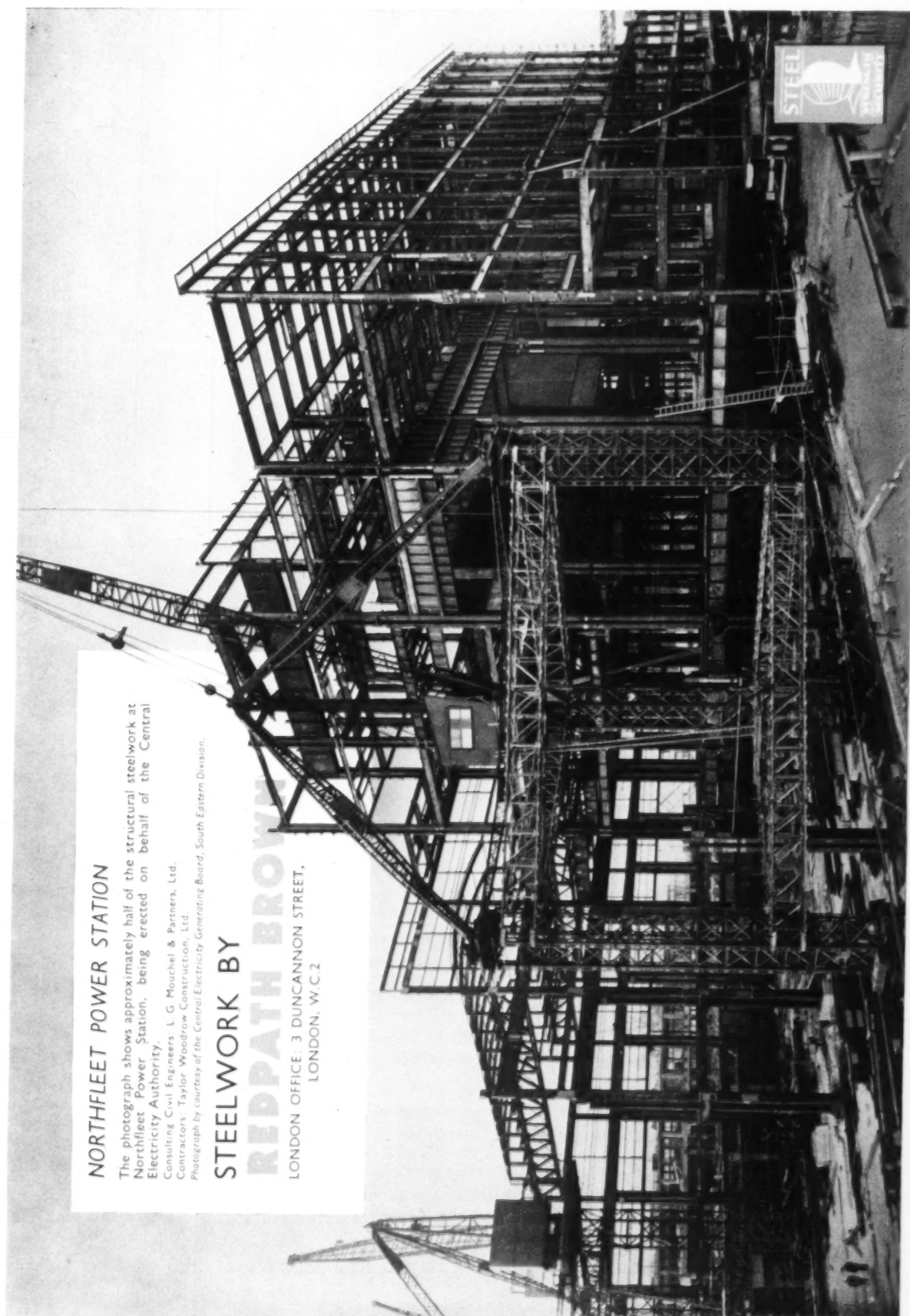
Contractors: Taylor Woodrow Construction, Ltd.

Photograph by courtesy of the Central Electricity Generating Board, South Eastern Division.

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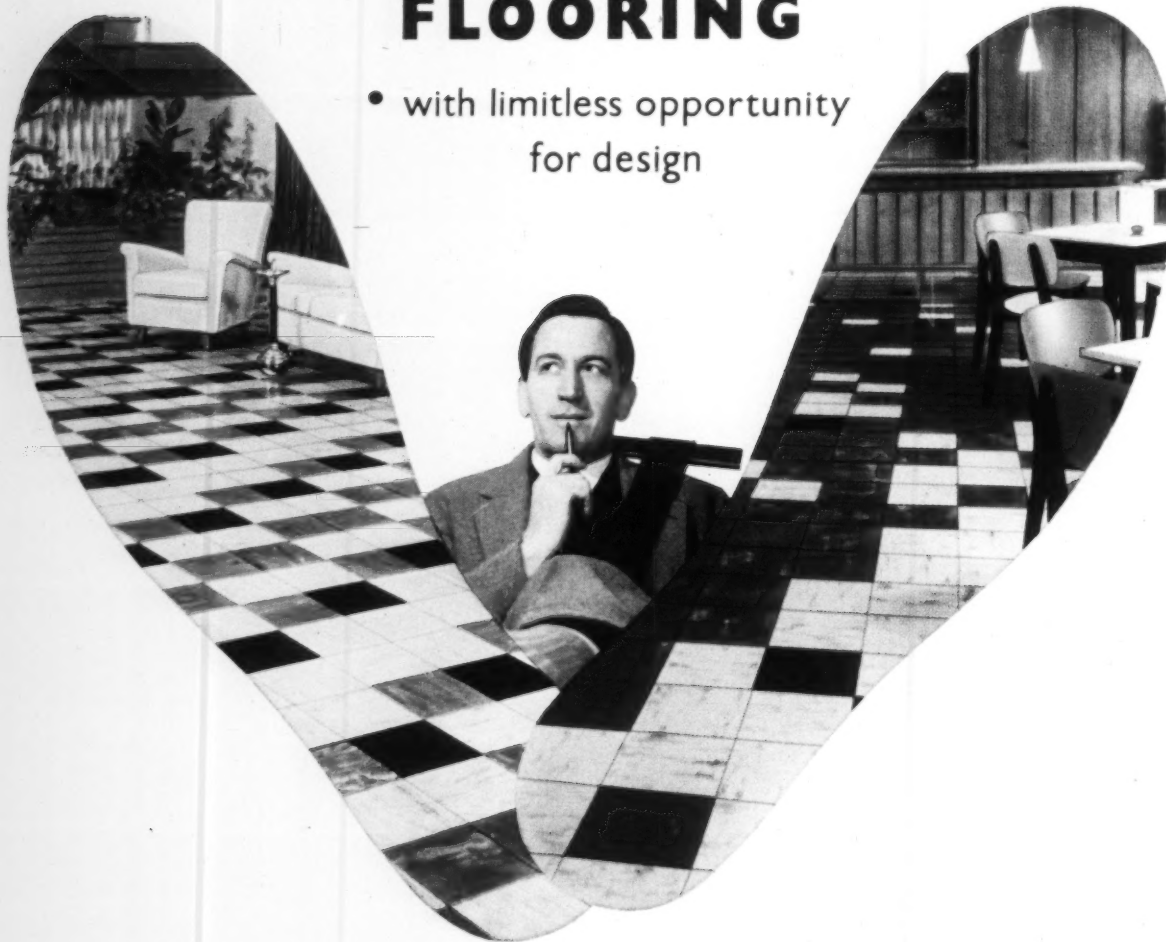
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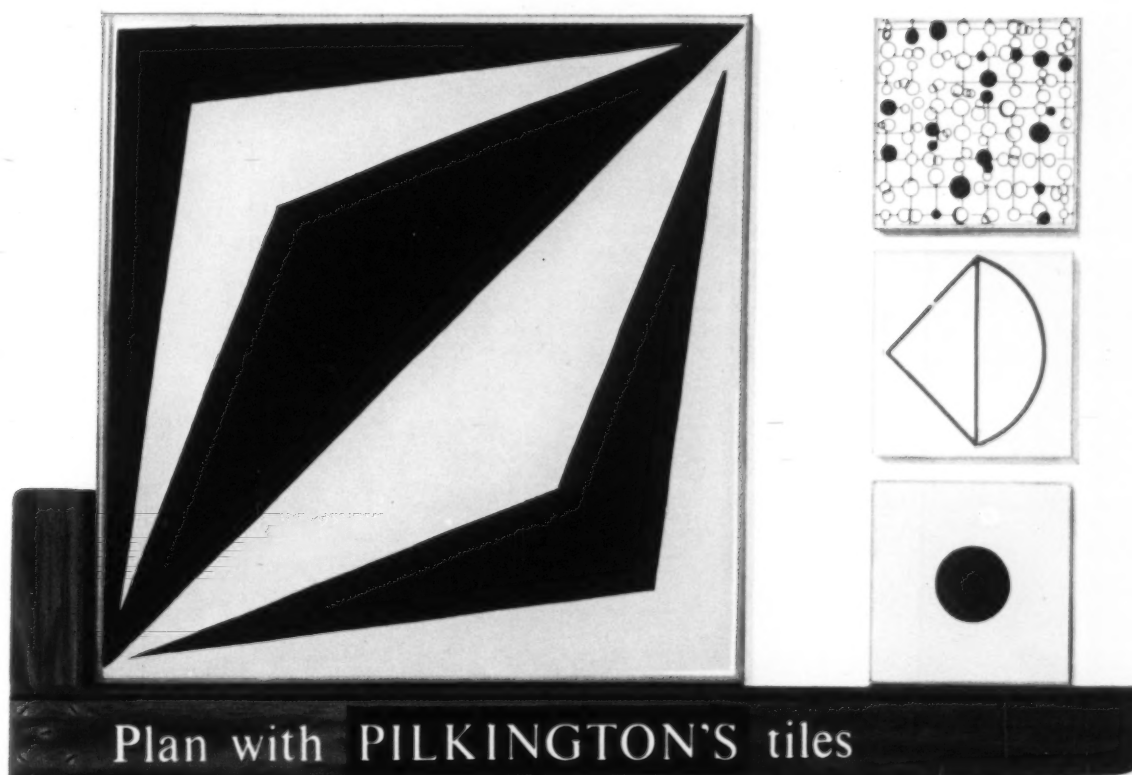
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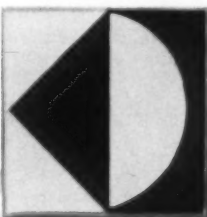
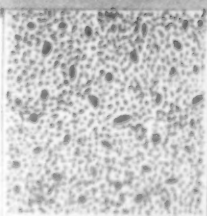
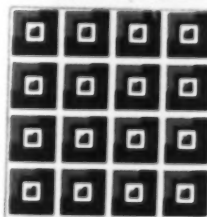
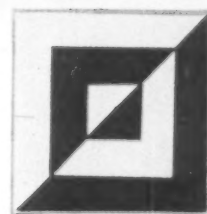
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The examples above show that Semtex flooring has been accepted as the most practical and decorative solution to flooring problems, (left): Semastix Decorative Tiles at Lederle Laboratories Division, Cyanamid of Great Britain Ltd., (right): Vinylex Tiles in a reception hall in Germany.

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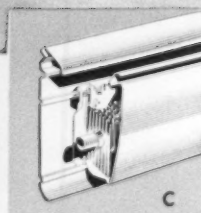
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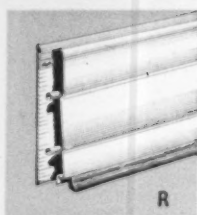
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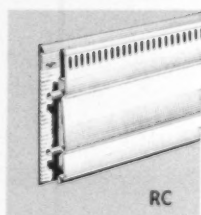
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MARGINALIA

Pitkin on The Tate

The series of busy, inexpensive, gilt-covered *Pitkin* guides has been augmented by a new volume, dealing with the Tate Gallery. Most of the *Pitkin* titles deal with historic monuments, country houses, etc., and the techniques employed in describing and illustrating buildings of that kind have rubbed off on the Tate. Although, inevitably, the bulk of the text and pictures deals with individual works of art, it is salutary to see this unhistorical monument treated rather as if it were a stately home—overstuffed with family heirlooms, but under-furnished. It is a rare pleasure to see such a building illustrated as a building, the portico on the front cover, the central hall and gallery XVII on the first double spread, and an aerial view of the greatest town-planning interest, including pioneer work by the LCC Architect's Department, 1, on the back. The coverage of the exhibits is



1, air view of Tate Gallery and LCC housing.

catholic (or should one say Rothensteinian?) and generous—over fifty pieces are illustrated adequately, if not brilliantly, and the text touches on most of the main points of interest raised by the collections, as well as by individual works. Indeed, one only hesitates to recommend it warmly as a remarkable half-crown's-worth because of the unsatisfactory pseudo-rococo gilt-work framing the front cover.

Sundry Ciceroes

London has grown so large, and a Londoner's use of it tends to become so specialized, that even its citizens find themselves in the role of tourists in their native streets. As a result the spate of London Guides continues unabated, no one can find his way about the Great Wen's secret treasures without a Cicero. Among significant recent additions is another edition—the Sixth—of Sam Lambert's *London Night and Day* (Architectural Press, 5s.), which remains, because of its

constant revisions, a guide to how to use London, rather than a competitor of Baedeker. More nearly in the Baedeker line is F. R. Banks's new *Penguin Guide to London* (Penguin Books, 6s.) more generalized in its approach, more solemn and more exhaustive in its coverage than the Lambert London, with



2, Lord Powerscourt's house from the pamphlet on eighteenth century Dublin.

which it overlaps extensively, as it does also with Dr. Pevsner's two London volumes in the *Buildings of England* series. As a general guide Mr. Banks's volume seems admirable, but its architectural information is too scattered and its opinions too conventional ('imposing portico in the classical style') for it ever to replace Pevsner.

On the other hand, an extremely useful addition to specialist guidance in London has been provided by the *Architectural Association Guide to Modern Architecture in London* (3s. 6d. from the Association) which consists of a marked map and a gazetteer, up to date as far as December, 1957, covering over 180 buildings and development schemes designed since 1927. Apart from its thoroughness and its efficiency as a direction-finder, its general usefulness has been much enhanced by its tall, pocket-fitting format. This is an ideal shape for a guide that only needs to be consulted at occasional bus-stops, etc., rather than held continually in the hand, and the same format has been used in the Irish Tourist Board's guide to *Eighteenth Century Dublin*, 2, issued in connection with the Georgian Group's tour of the city, and obtainable from Bord Fáilte Éireann, through their various offices.

The Penrose Annual

The unexpected death of R. B. Fishenden created a disturbance in the flow of the publication of the *Penrose Annual* which made many of its devotees doubt its possible survival. However, Mr. Allan Delafons, entrusted with the editorship, battled against the many difficulties which beset the preparing of these substantial volumes and won. Volume 51 had already been planned by Fishenden and came out at last in the autumn instead of at the beginning of 1957. Volume 52, with the publication date in May, was catching up, and next year, it seems, the routine will be established once more. The new volume* moreover is as rich, as varied and as competent as its predecessors—a great compliment, if one remembers Fishenden's triumphs.

*The *Penrose Annual*, Vol. 52, 1958, edited by Allan Delafons.

There are, of course, differences between the two editors. Mr. Delafons in his editorial introduction is more technical than Fishenden and less rewarding on the aesthetic side. But the selection of authors is equally interesting where the subject is technical and where it is aesthetic. For review readers the paper which will be given first place is Mr. Floud's on Voysey's Wallpapers. Mr. Floud distinguishes two phases in Voysey's style as a designer of flat patterns, and prefers the earlier which is close on the one side to William Morris on the other to *Art Nouveau*. He is less in sympathy with Voysey's later, lighter, more original, more naturalistic and more playful style, of which he shows no outstanding example. The paper, it need hardly be said, is full of unpublished details and gives one the feeling that its author had much more available had he been given more space.

The technical papers deal with the frightening changes in book and magazine production by means of new processes, for instance with the one *Penguin* book so far composed entirely on the film setter without metal type. New machinery seems to be mostly invented or at least developed in America. There is also much stress on the rapid spread of colour photography and colour printing in magazines, even in dailies (one newspaper in England so far accepts coloured advertisements). Most of the technical articles are technical indeed and certain passages seem to the layman to be taken straight from Paul Jennings ('at the time of writing it was available only in tungsten stock rated at Weston 8'). So the layman may be forgiven for turning with relief to Mr. Davis's paper on firms' Christmas cards, not a wholly gratifying subject, to Mr. David Thomas on Trends in English Typography from the 'thirties to the 'fifties, and to Mr. Schmoller on the *Officina Bodoni*.

A Stadtkrone for Marl

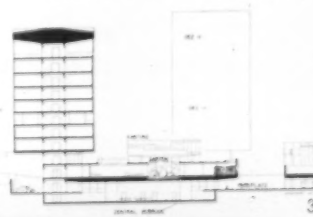
The customary disappointments of second prize of which Hans Scharoun must have more experience than any other major architect alive—could only have been the sharper

in the case of the competition for the town centre of Marl, because it was clear that what was wanted was a *Stadtkrone*, that fine old Expressionist concept of a city centre that should stand up like a proud symbol above the town. The idea goes back to Bruno Taut and the heyday of the Expressionists, after 1918, but Scharoun's project, 5, shows that the tradition is still alive, and still capable of calling up fine work from its pioneers.

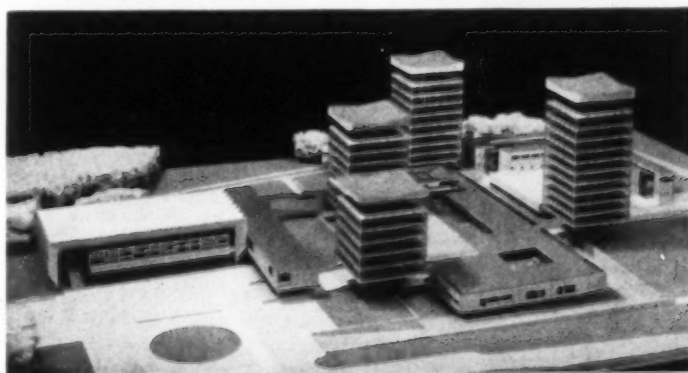
What is even more to the point, however, is that it is a tradition that has taken on new meaning and force in the last few years, as dissatisfaction with diagrammatic, Athens-Charter, city-planning continues to grow. The measure of the force it has acquired is given by the winning design, 4, which is the work of the Dutch architects Bakema and van den Broek, who have hitherto followed the Athens Charter line so piously that Bruno Zevi has accused them of *Subtopia Razionalistica* (*Marginalia*, July, 1957). The spritely group of towers with which they propose to dominate the *Graue City van Marl*, are still very much in the Rationalist tradition, with their mushroom structures, but a section that shows these structures also shows some closely interlocked three-dimensional planning, 3, for pedestrians and vehicles, and the whole project seems to look forward to the kind of reintegrated planning, coupled with the creation of adequate symbols of the good urban life, that the Smithsons demanded in their *Cluster City* article in the *REVIEW* for November, 1957.

Fedala Water Tower

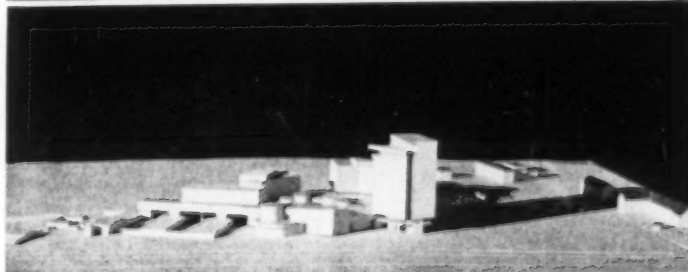
As ideally neat as a student's model carved from the solid, the new



3

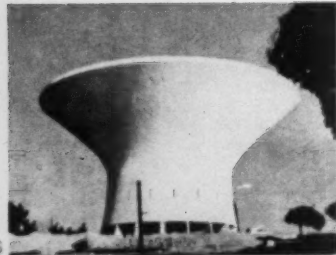


4



5

3, section through one tower of winning design for the *Stadtkrone* at Marl by Bakema and Van den Broek; 4, air view of the model; 5, Scharoun's design for the same competition.



6. Fedala water tower, showing the outer shell, and 7, the covering of two ring-vaults of pot tiles.

water tower at Fedala in Morocco is yet another demonstration of the way in which mathematical subtlety and rules of practised thumb chime together in the best recent vault-work. The outer shell, 6, is a heavily reinforced hyperbolic paraboloid, generated as usual by a shuttering based on straight timbers and founded in a massive concrete ring below ground. So far, this is what one might expect in a pre-stressed shell in which the talents of Prestost and Torroja combine to produce a form whose superficial simplicity conceals mathematics of daunting complexity. But the covering a vital necessity in such a climate, to prevent evaporation—relies on time-honoured peasant vaulting techniques, and consists of two ring-vaults of pot tiles, 7, put up over simple mould-boards, without complicated shuttering.

CORRESPONDENCE

Material and Design

To the Editors.

SIRS,—May I ask you to make it clear to your readers that the introductory paragraphs to my article in the July ARCHITECTURAL REVIEW were not, in their published form, written by me. They contain statements with which I do not agree. The article will appear in a final form in my book on architectural lettering, to be published shortly by the Architectural Press.

In the article referred to there also occurs a description which does not refer to the illustration appended. 5 from New Cross Road is an example of gilding and painting on glass; an example of the incised, triangular-section, glass lettering referred to is reproduced in my article of October, 1954, 16.

The following corrections should have been made to the captions: 4 is a public, not a boat-house sign; 12 is in Oxford Street, not in Oxford; and 27 in the Old Brompton Road.

Yours, etc.,

NICOLETTE GRAY.

Greenwich.

Georgian Sculptors

To the Editors

SIRS,—Mrs. Webb in her article 'Georgian Sculptors' (AR May) suggests that the Gibbs' drawings in the V. & A. Museum illustrated by her (figs. 6 and 8) may be alternative designs for the Craggs monument in Westminster Abbey (fig. 5). I think they are more likely to be connected with Gibbs' work for Chalmers Turner at Kirkstall in Yorkshire, where he designed the Mausoleum attached to the parish church. (See my forthcoming article in AR.)

Both the designs (figs. 6 and 8) show a youthful figure and include books, suggesting literary tastes in their subjects; Scheemakers' monument to Marwood William Turner is of the young man (he died in 1734, aged 22, whilst making the Grand Tour) leaning on an urn, as in fig. 6, though of very different design, surrounded by volumes of the classical authors.

Both the designs are set in round headed niches of similar proportions; similar too to the actual niches in the mausoleum and unlike any possible setting in the abbey or the background to fig. 5.

The design of fig. 8 is clearly shown, in a simplified form, in both the versions of Gibbs' design for the mausoleum. (It is possible that it was included merely to 'furnish' the drawing, but this is a less straightforward explanation.)

Yours, etc.,

Redcar, Yorks. A. C. TAYLOR.

Man in a Hot Tin Box

To the Editors

SIRS,—This man in his predicament is not the cause of the disease which afflicts our modern cities, he is merely the symptom. The motor car dominates the physical scene because that scene has grown too huge, and the use of the motor car has become too universal.

A motor car is merely an artifact, to plan for it leads nowhere. It is the community that must be planned for a reasonable number of people, and thus a workable number of houses, shops, offices, theatres, factories—and motor cars.

Proper planning of communities can greatly reduce the need to use a car and indeed to have a car; and there is no doubt that public transport should be greatly improved and be more widely used. It must, however, be remembered that public transport also tends to fail, and sometimes disastrously, in the larger cities, not due to competition of the motor car but due to too many people living round a restricted perimeter all working in the one place in the centre.

Yours, etc.,

Edinburgh. RICHARD E. MOIRA.

Achthamar

To the Editors,

SIRS,—I was very pleased to read the interesting article on Achthamar in your March, 1958, issue.

In spite of some misinterpretations of Armenian architecture and some superficial conclusions on the part of the authors, the article was very interesting. The photographic study was very successful; I congratulate the authors for their courage not to follow the beaten track of studying Roman or Greek architecture but revealing the creations of a small but historically important nation; and thank you for encouraging them. Armenian architecture possesses

many original features and outstanding achievements, and it is little studied by European scholars. It is the opinion of many that Seljuk architecture was influenced by Armenia, as many Seljuk mosques are nothing but Armenian churches converted. It is also obvious that many Islamic ideas come from Armenia. On the other hand, your authors seem to overlook influences in Armenian architecture from the Hittites, Urartu, Hayasa, etc. Faces on the reliefs are certainly rather Armenian, with their large eyes and prominent noses, than Mongol. For the study of Armenian art and culture, I would recommend to the authors to avail themselves of the Armenian Archaeological Museum, Academy of Science, or the Armenian State Library, Erivan, Soviet Armenia.

Yours, etc.,

Istanbul. B. BENAR.

Corridor Street

To the Editors,

SIRS,—I should like to correct the idea, put forward by a whole generation of architects and reinforced in the May AR (cover, Notting Hill article), that the corridor street is necessarily an obsolete and unsatisfactory form of layout. There are plenty of other means of getting good townscape of course, but this particular form has been the basis of some of the most superb urban scenes in the land. What of Oxford High, what of Chipping Campden, what of Lewes, Guildford and Winchester, what of a myriad of little towns like Marlborough, Thame and Bridport; what of Abbey Street, Faversham? True, I could just as easily cite a list of first-rate townscapes that are based on other shapes than the street; I just want to emphasize that the street has been and can still be the basis of much that is tremendously good in urban layout. To be really successful a street should normally have one or more of these characteristics: (1) it should curve, gently but perceptively out of sight, so that the buildings on one side appear in perspective; (2) it should widen, subtly or suddenly, in its most important stretch (Tenterden has a main street that narrows in the middle and opens out at either end and is successful); (3) it should have a prominent feature to close the view, like the Cross at the visual end of three of Chichester's four cardinal streets.

Yours, etc.,

Chichester. DAVID W. LLOYD.

A Liturgical Brief

To the Editors,

SIRS,—The article by Rev. Peter Hammond in your April number was of great interest.

The approach of the liturgical movement appears to be that developed in English Congregational meeting-houses of the seventeenth and eighteenth centuries, the family of the faithful gathered around the Lord's Table.

It is alarming to notice that the High Victorian stage already appears to have been reached and a number of the plans illustrated in your article are suitably identical with those of Scottish Presbyterian and English nonconformist buildings of the nineteenth century. The plan of the proposed church at Suarez is virtually that of the Kingsway House Chapel (Congregational) by Alfred Waterhouse and other examples could be quoted.

An antipodean may be forgiven if he wonders whether new Priest is but old Presbyterian writ large.

Yours, etc.,

JOHN WHEELER.

Brisbane, Australia.

Biography

Orjan Luning. Born 1919. Graduated as architect at University of Stockholm in 1945. Worked for Sven Markelius 1945-46, then started own office. Work includes town planning in Sweden and the Bahamas, private houses in Sweden, France, Germany, Mexico, concert hall in Stockholm. Hobbies—French art, in town; on the coast, unsophisticated arts, especially those concerned with shipping.



8. Orjan Luning.

INTELLIGENCE

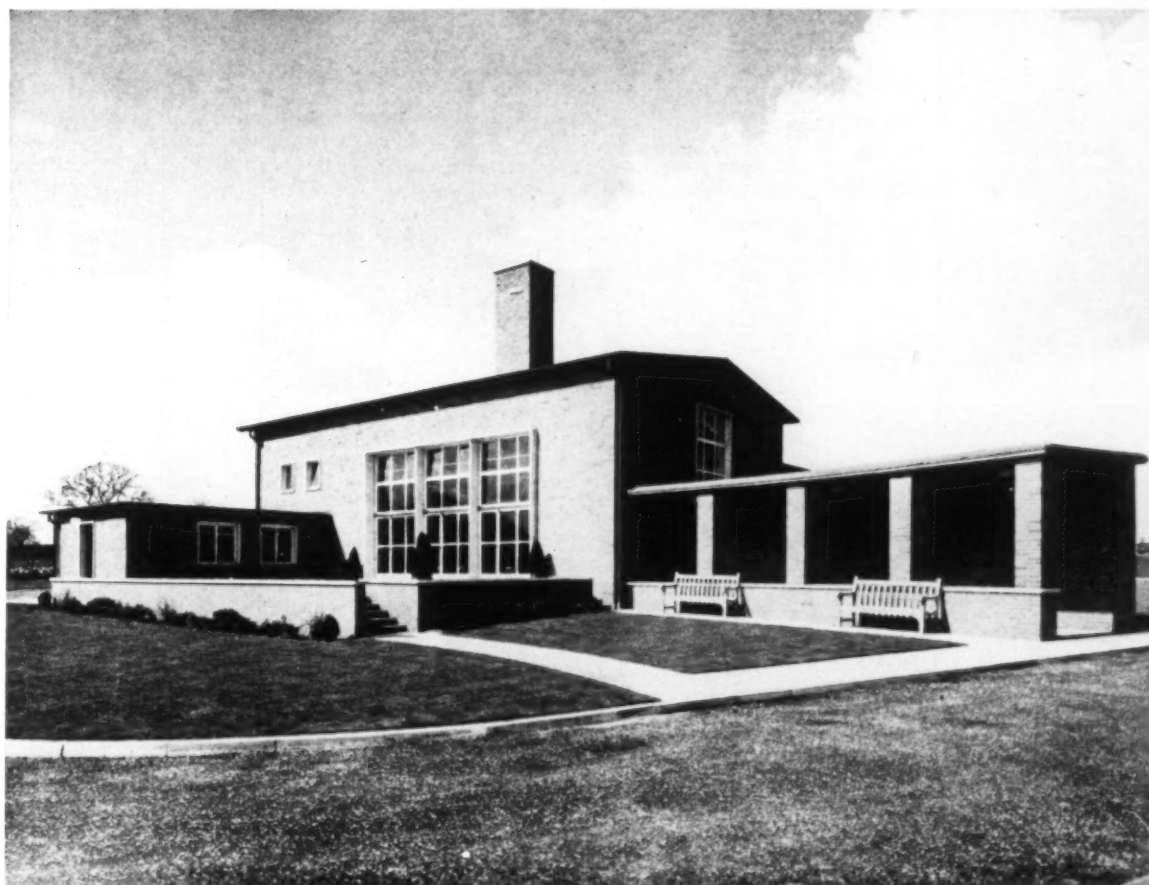
Brighton and Hove town councils have been allocated an annual Government grant to assist in the preservation of the finest examples of their Regency terraces.

ACKNOWLEDGMENTS

COVER, Bronislaw Schlabs, SOLENT NATIONAL WATER PARK, pages 145-152; pages 147, 148, Aerofilms, remainder, Nairn Cullen, Arphot; page 149, top left, The Times, OFFICES IN BIRMINGHAM, pages 153-159, Galwey, Arphot, LOOKING UP, pages 160-170; frontis top, S. Newbery; 1, Unistrut Corporation; 3, 8, 9, 29, C. Robinson, Arphot US; 4, 6, M. Silverstone; 7, 21, 22, Ezra Stoller; 11, Steef Zoetmulder; 13, Toomey, Arphot; 15, E. Braun; 16, A. Cartoni; 20, Foto Porta; 25, L'architettura; 26, 28, Lionel Freedman, CHURCH IN STOCKHOLM, pages 171-174; Atelje Sundhal, HOUSE IN CALIFORNIA, pages 174-176; Julius Shulman, EAST OF EUCLID, pages 178-180; 2, 7, 9, R. I. Banks; 5, J. Donat; 6, P. Koralek, INTERIORS, pages 181-186; 1, 5, 10-20, Nolan; 6, 9, Galwey, Arphot, THOMPSON FEET, pages 187-188; 1, 2, 6, 7, LCC Architect's Department; 4, 5, Galwey, Arphot, CURRENT ARCHITECTURE, pages 189-192; 1, Pantlin; 2, 4, Toomey, Arphot; 5, 6, Edward Eves; 7, 8, S. Newbery, MISCELLANY, pages 193-200; Exhibitions, 1-6, Niarchos Collection Photograph Knodler; Clouded Yellow; 2, 3, I. de Wolfe; Torrent Bed; 1-3, I. de Wolfe; Counter Attack; 1, Nairn, Arphot, SUSPENDED CEILINGS, pages 201-210; 1, 2, Troughton & Young; 5, G. I. Smyth; 6, Harris & Sheldon (Electrical); 8, J. Maltby; 10, Crompton Parkinson; 12, Falks Photographic Section.

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141 Marginalia

144 Frontispiece

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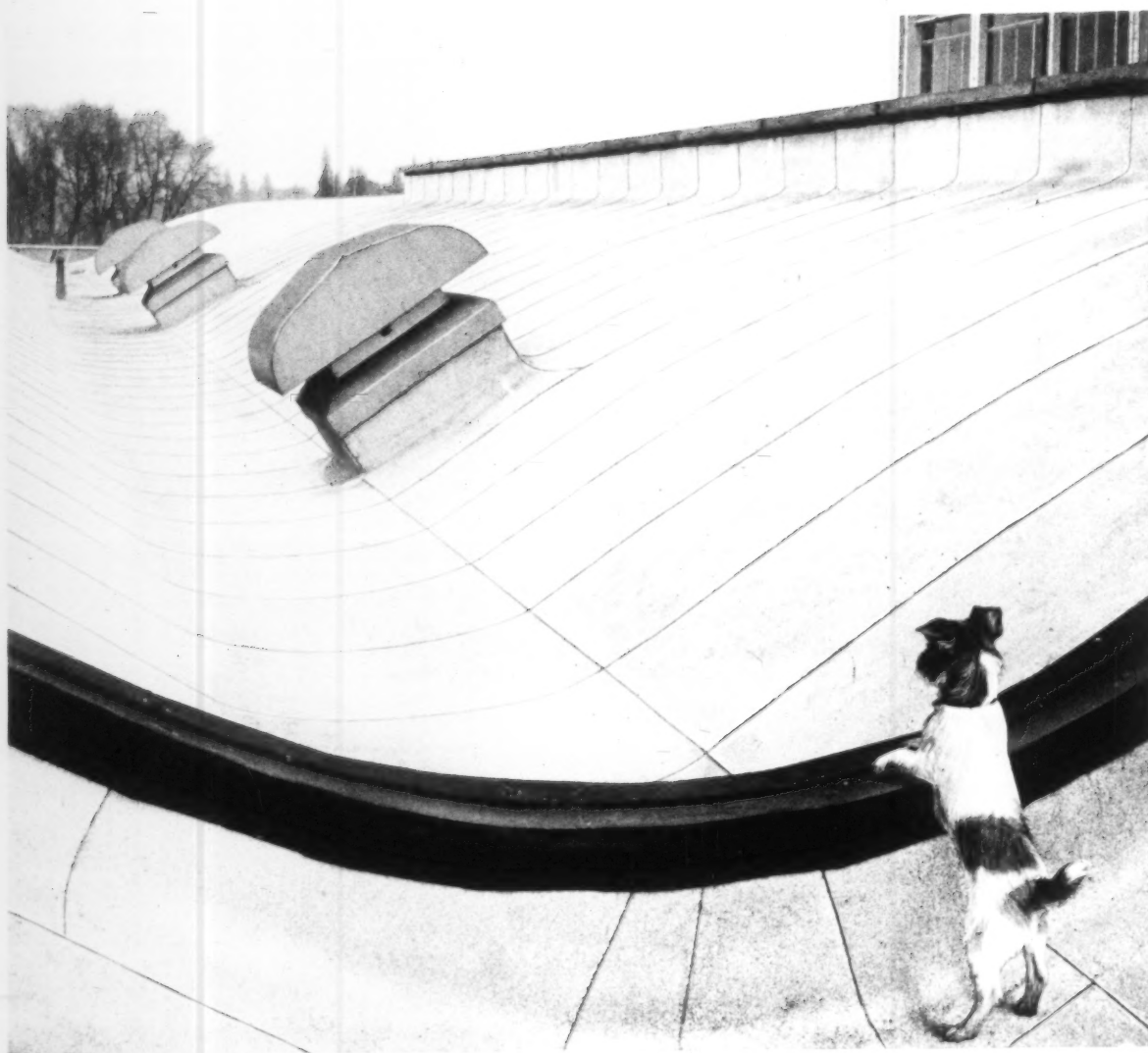
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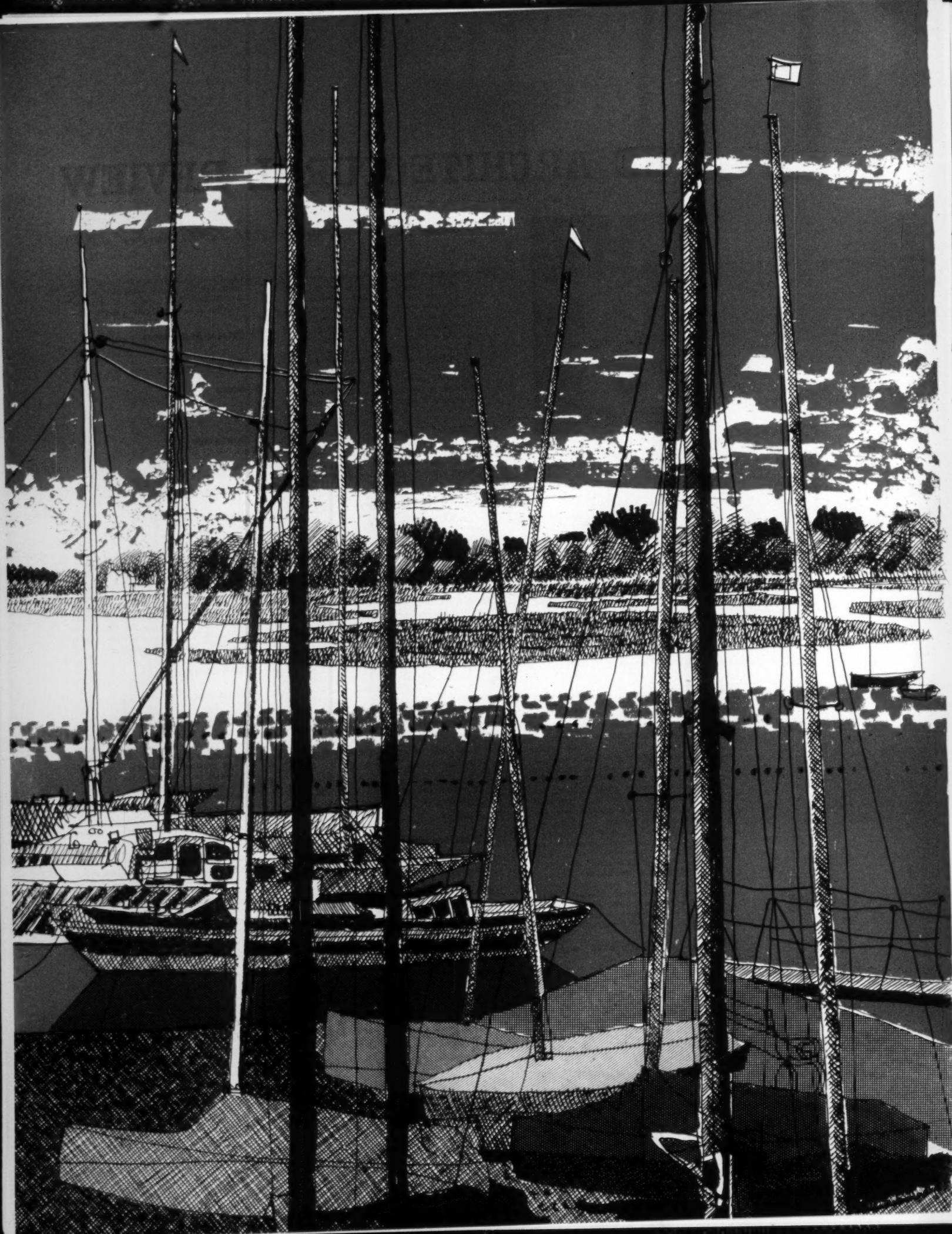
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FIVE SHILLINGS



As Mr. Robson points out in the article which begins below, the Solent is a place for yachting, and much of its future as a national water-park depends on the way its shore-based facilities for yachting are handled. Though these can be very various, Gordon Cullen's drawing opposite shows the existing basic type, which needs revitalization rather than reform—the busy, easy-going multi-purpose harbour such as Lymington, with its forests of masts and rigging and its buildings squatting comfortably and naturally between the green shore and the water. The map on page 152 shows the location of the Solent.



Geoffrey Robson

SOLENT

A NATIONAL WATER-PARK BEFORE IT'S TOO LATE

The Solent is the stretch of water between the Isle of Wight and the Hampshire mainland, bounded on the west by the narrows between Hurst Castle and the forts to the west of Yarmouth, and on the east by the forts protecting the entrance to Portsmouth and Southampton Water. It is not merely the only large expanse of sheltered deep water on the south coast of England, but its shores are the only 'undeveloped' piece of coastline between Margate and Swanage. They have remained 'undeveloped' so far as the result of a combination of circumstances. On the mainland between Calshot and the Hurst narrows the shores are muddy and shallow and are not immediately tempting to the bather, nor easily approachable by boat. Extensive marshes and the deep inlets of Lymington and Beaulieu rivers have discouraged road building and development of the coast, and the big landowners who control the Solent shores and the land on either bank of the Beaulieu river have managed to restrict building and prevent access to the shores, to a certain extent because of the absence of temptation and acute financial need. There is no doubt, however, that without the benevolent influence of private landowners—which cannot be guaranteed to last indefinitely—the northern shores of the Solent might now be as hideous as Hayling Island, and Beaulieu river might be much like the Thames near Maidenhead.

On the Island shore the deep inlets of the Newtown and Medina rivers have forced the main roads away from the coasts, and from Yarmouth in the west to Ryde in the east there is little building on the coast, except at Gurnard Bay and Cowes, and farmland and large estates such as Osborne come down to the low cliffs. The shores of the Isle of Wight already developed for mass amusement are confined to the western end—Colwell and Totland Bays and the south-eastern shores from Sandown to Ventnor, where cliffs,

sandy beaches, and the brisk channel sea provide the conventional requirements for a family holiday.

The shores of Southampton Water are already so far gone towards industrialization that it is difficult to suggest any remedy; on the west, Ower and Ashlett creeks are now useless to yachts as a result of the Fawley refinery, though Ashlett is now the headquarters of the Esso sailing club. On the eastern side, the Hamble river, which probably holds the greatest concentration of moorings, yachtyards, and boat builders in Britain, is now almost unbearable as the result of the stench and noise from Fawley, and the possibility of another large refinery at Hook, on the rather unattractive shores south-east of the Hamble, may drive yachtsmen to other, already overcrowded harbours. The question of policy involved in siting a second oil refinery in this area does not concern us, nor the difficulties of dredging berths for large tankers at long piers in shoal water on a comparatively unsheltered shore; to the sophisticated eye another refinery, such as the one at Fawley, might improve this rather dismal shore as seen from a mile or so on the water. We must assume, however, that anyone who enjoys this more than the sight of wooded shores or marshes can enjoy himself on the upper Thames estuary, or on countless other industrialized rivers, for although there are no practicable harbours between the Hamble and Portsmouth, and the chimneys and cranes of Gosport lie in the background, there is no doubt that a refinery at Hook on the scale of Fawley would effectively ruin the present predominantly rural character of the Solent shores.

This is the picture which presents itself today. The real threat—as it exists over the whole country—is the tendency to spread development thinly over the whole area; the same tendency which results in ribbon development, and tempts the house builder always to add one more house to the ‘unspoilt countryside’; and is in its way more destructive even than the unconsidered siting of a large industrial plant.

As an awful example of the ruination of a large area by a single building we have only to sail thirty miles west to Poole Harbour. The view from the old quay at sunset, over Brownsea Island and the Purbeck Hills is one of the most splendid in the south of England. From the water itself the sun lights up Hamworthy power station which, though in itself no worse and no better than scores of monumental pieces of nonsense, strikes a note of pure horror in this particular landscape. The cranes, elevators and chimneys of Poole itself, though squalid and Heath Robinson, are acceptable as part of the little commercial port, but from almost any part of this great harbour the power house now seems to dominate the landscape. In the far greater expanse of the Solent another oil refinery on the Gosport peninsula might not be so disastrous, but any large-scale building on the mainland or island shores, in the comparatively narrow waters of the Solent proper, would have a similar effect. The few existing houses seen against a background of woods provide an interesting punctuation to the shore, but any slackening of the present private control would lead to road building, and in rapid sequence tree felling, wirescape, beach kiosks, and a line of chromium plate and cellulose from Needsoar Point to Lymington.

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the purpose of the shore is to provide a pastoral backcloth for the activities of the wealthy yachtsmen, and incidentally to preserve the privacy of the few fortunate people who own houses on the sea. Without some form of control, combined with practical assistance to the present landowners, these fortunate people will eventually share the fate of thousands of others and find themselves engulfed in a sea of new houses in which none will obtain any real pleasure or privacy. The wealthy yachtsman is almost as rare as the Daily-Worker-cartoon motorist, top-hatted and Rolls Royced, and yachting is almost a national sport, enjoyed probably by far more people than the ramblers and climbers for whom the wilder areas of the national parks are preserved. It is one of the many curiosities of the times that people who travel everywhere by car and bus still refer to motorists as ‘them,’ and that ownership of a ‘yacht’—which today may mean anything from a ten-foot dinghy to a fifty-year-old five-tonner, the one built at home for the cost of a clubman’s bicycle, and the other bought and maintained by its owner for far less than the cost of a second-hand ‘weekend’ car—implies membership of a wealthy and privileged class. It must be realized that a very large number of people enjoy themselves on the water in a remarkable variety of ways, and that the Solent being

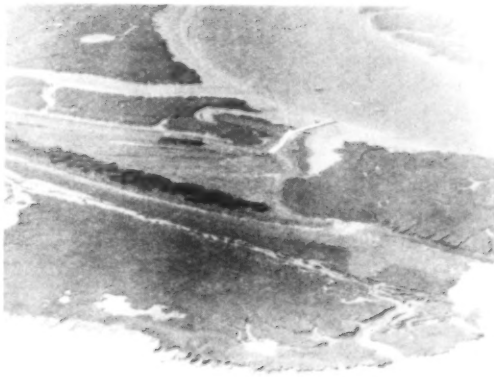
the only large stretch of sheltered water on the south coast within a reasonable distance of London should be not merely preserved but that some positive action should be taken to enhance its different attributes.

To continue the analogy with the existing national parks, which are all considered from the viewpoint of the landsman, it is important that an area like the Solent should be preserved and developed for people who are willing and able to exert themselves to gain their weekend and holiday pleasures; the public for whom a national park is preserved are those who want to walk—cycle—or sail—not those who are satisfied to see the view from the inside of a car in a strategically placed car park. The hikers, ramblers, and campers may be equated to the day dinghy sailors, who may run their boat ashore at night and sleep under an awning, the people with small cruisers who want to explore the creeks and secluded harbours, fish, or watch bird life in Newtown or Beaulieu. Apart from these, there are the people to whom yachting means racing, from dinghy racing in the rivers to short passage races in cruising boats, and one must not forget the charabanc tourist—the cruisers and pleasure steamers.

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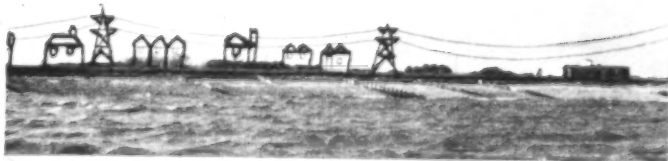
The Solent: a chart of opportunity and danger.



address best left alone



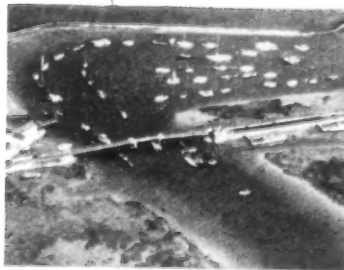
another Fawley here?



one more day, or better - 10.
Lymington



make the dig bigger
by dredging and marinas.



Coastal creeks contrast well with Yarmouth, in Lymington. This destroys them.



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The Solent: a chart of opportunity and danger.



wildness best left alone



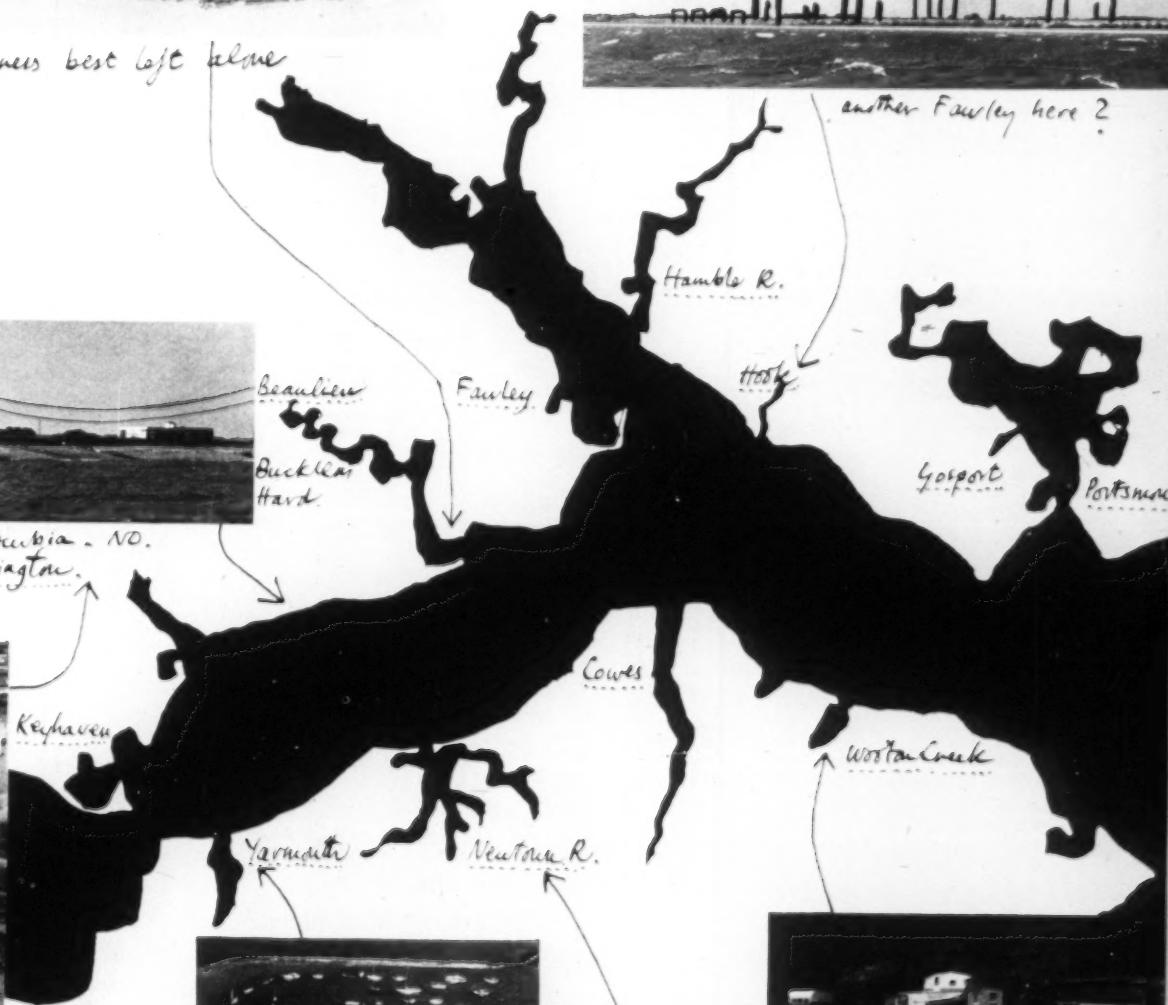
another Fawley here?



one house okay, suburbia - NO.
Lymington.



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Lovely creeks contrast well with Yarmouth and Lymington. This destroys them.



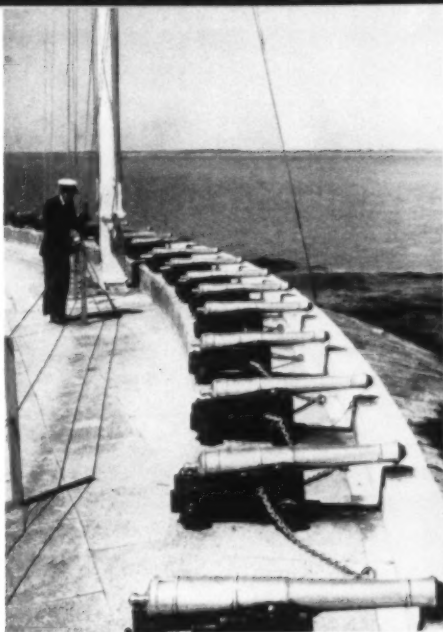
The Solent: variation of character.

this is Poole Harbour, a microcosm of the Solent; opposite are examples taken from the whole area.



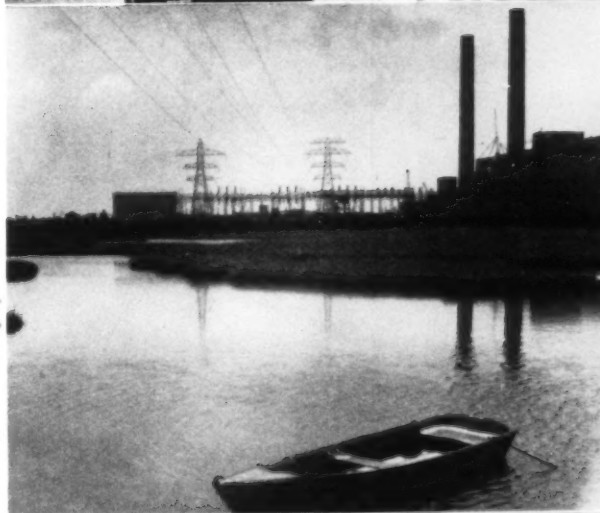
right: Poole Yacht Club

left: Caves Yacht Club



Power Station: Poole

Coast east of Lynnhaven



Lynnhaven, left.

mouth of Beaulieu R.



the Horizon.



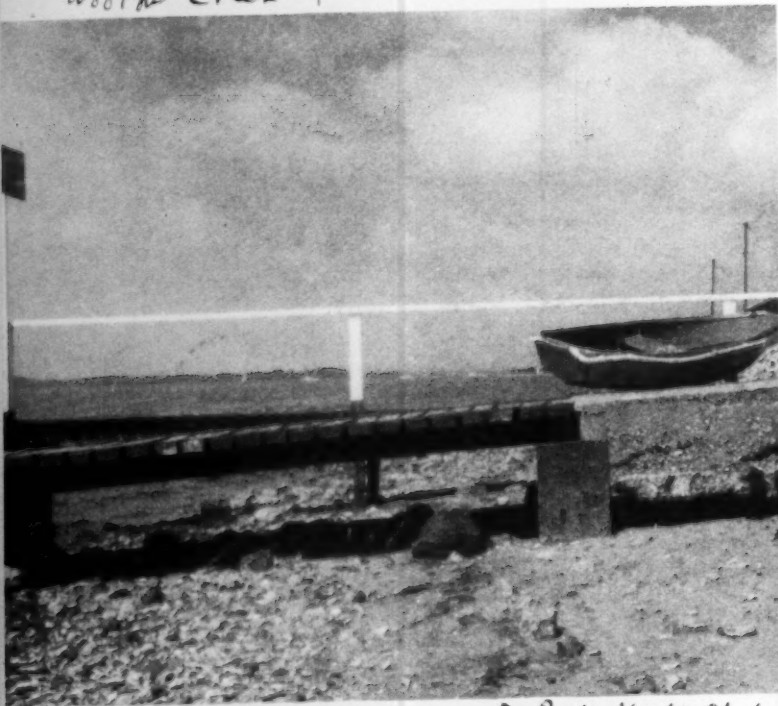
The Solent: a National Park.



Wootton Creek ↑



↑ Beaulieu River



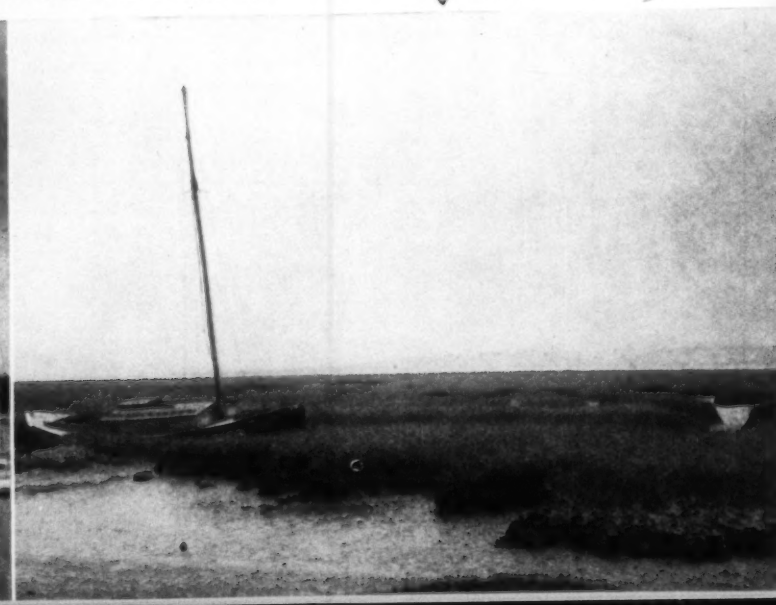
Buckle's Hard ↓



↑ Portsmouth Yacht Club

Hamble River ↑

↓ From Exbury



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If we ignore the eastern shores, and Hamble river, which could hardly be more highly developed, the principal town harbours are Lymington, Yarmouth and, of course, Cowes. Yachting, which is now a very different thing from the brassbound social activity of Edwardian times, exists amongst the ruins of scores of decayed commercial harbours, once busy with small coasting ketches and schooners, very much as in London a dozen families live like mice in the great rooms of one Victorian middle-class house. Lymington was an important port in the Middle Ages, and was used by large coasting vessels until the end of the nineteenth century. As the result of damming the waters of the river, and building a railway bridge to the Isle of Wight ferry station in the late nineteenth century, the natural scouring effect of the river has been destroyed, and it is now used with difficulty by yachts and the shallow ferries, navigable only by courtesy of British Railways who dredge a narrow channel.

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Much as most yachtsmen dislike the idea of planning, in a vague and rather sentimental way, there is no doubt at all that a competent authority, representing all the interests—urban, rural and industrial, the yachtsman, fisherman, and birdwatcher, and the businesses which minister to them, could not only preserve what is left of the undeveloped coastline and the quiet creeks and harbours, but could do so without hardship to anybody by concentrating and developing mooring, landing, and boatyard facilities in one or two harbours, so as to eliminate the temptation for anyone to commercialize the others.

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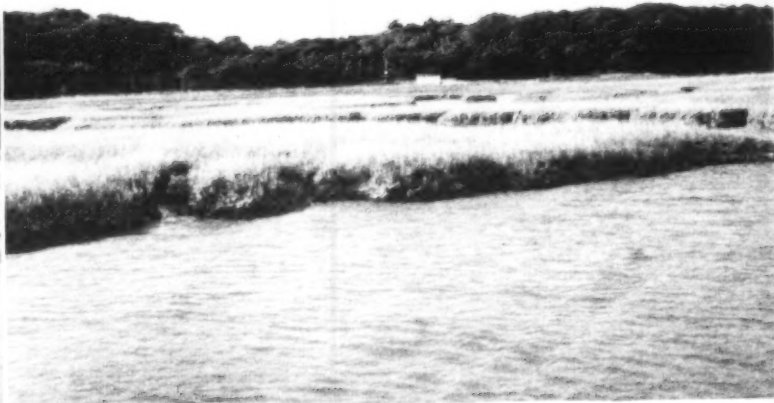
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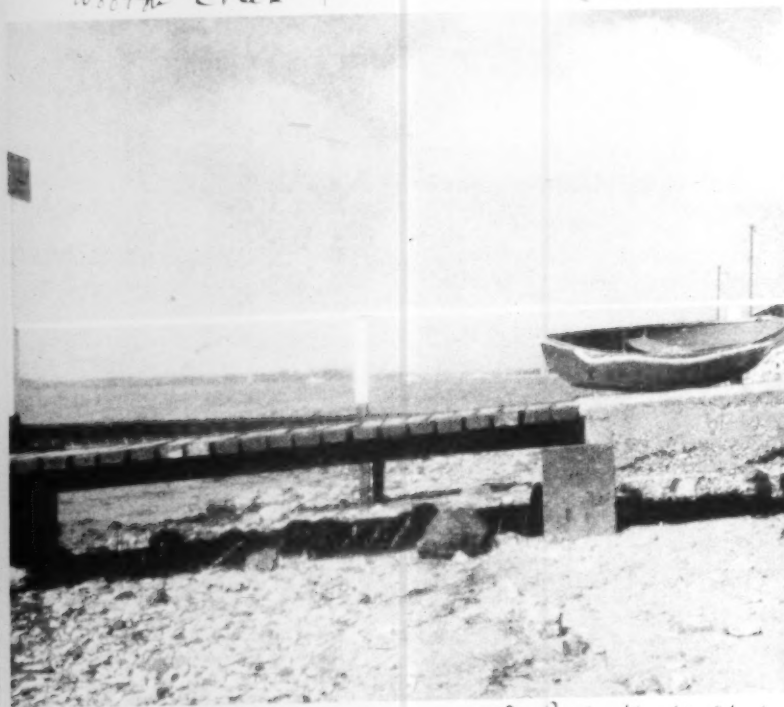
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Keyhaven: With a limited amount of dredging Keyhaven could accommodate a very large number of small and medium sized cruising boats and the construction of a 'training wall' at the entrance might improve the scouring of the channel. As it is the one harbour in the Solent which could be developed extensively without any great loss to the lover of solitude, the local authority might be advised and assisted in the provision of moorings, landing stages, slipways and all the minor facilities—water, petrol, etc., and possibly the establishment of a boatyard which could be leased for private management. It would also be an excellent position for the establishment of a 'youth hostel' sailing club, which might be run by the local authority with the guidance of the Park Authority.

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ing in two wars; thirty years ago there were moorings capable of taking large yachts close inshore above the yacht club, where the river is now completely silted up. It is too much to hope for the removal of the railway bridge which cuts off a large section of the river, but dredging the river at least as far as the bridge could not only increase the space available for moorings by nearly 100 per cent, but would increase the scour on the ebb and help to keep a deep channel in the lower reaches. The habit of dredging only the lower reaches of a river encourages silting elsewhere and consequently redoubles the need for dredging lower down. Although it is not such a simple problem as in the tideless Mediterranean, with the moderate rise and fall in this part of the Solent (at Lymington it is only 8 feet at spring tides, and at neaps the rise and fall is sometimes hardly visible) some form of mooring fore and aft to a quay and mooring buoys could be adopted, and the whole frontage to the public ground north of the yacht club laid out as a harbour frontage. In addition to this, the lakes to the south of the yacht club, at least one of which could take quite large vessels at high water in the thirties, could be dredged and cleared of the encroaching mud. By the construction of a lock a non-tidal Marina could be formed, capable of holding as many yachts as the river itself does at present. There is little doubt that the capital cost would yield a handsome return, and a scheme like this could be self-supporting. Whilst the individualist yachtsman is prepared to put up with great discomfort and hardship for the sake of solitude, the man who enjoys mooring in a crowded river for the sake of company is prepared to pay for his pleasure, and can reasonably expect somewhere convenient to tie up, fill up with water, dispose of his rubbish and get ashore for a drink. The development of Lymington and Keyhaven would reduce the pressure on Beaulieu river, which at least in its lower reaches should be left untouched. It is at present preserved by a benevolent aristocracy, and the results—whether the motives are selfish or altruistic—are excellent. The river is certainly the most beautiful navigable river east of the Dart, and apart from adding a few more pile moorings and providing reasonable car parking space off the river front at Gins Farm—for mooring owners—it should be preserved as it is.

On the Island shore, Wootton is one of

the pleasanter little harbours which is unfortunately becoming rather squalid as the result of uncontrolled dumping of old hulls on the banks, for use as houseboats. We do not suggest that this should be prohibited, but if it is accepted better provision should be made for mooring, access, refuse disposal, etc., and here again by more intelligent control of the upper waters and occasional dredging, moorings could be considerably increased without spoiling the river in any way. Wootton is controlled by the Queen's Harbour Master at Portsmouth, whose main aim is presumably to keep a clear channel for the Portsmouth ferry which berths near the entrance, but a private association with Wootton Creek Association controls moorings and navigation in the creek itself. The Association, through their own Harbour Master, Mr. Young, do an excellent job under difficult circumstances, but obviously require more financial support. It is not possible indefinitely to make do with the wreckage of old landing stages and to hold up crumbling banks which have had no real maintenance since the days when these creeks and harbours were used commercially.

Cowes itself could hardly come within the sphere of influence of a National Parks Authority, but the impression given is that it is still thinking in terms of the so-called great-days of yachting; given a very small expenditure on landing stages and water taps, many more small yachts would use the upper reaches of the Medina river in spite of the shoal water. Although it is considerably shorter than the Beaulieu river very few yachts penetrate as far as Newport, which in the old days was regularly used by sailing barges and small coastal ketches. Given a few more spare moorings, it would be possible for such a harbour to be rather more welcoming to the casual visitor and to offer some more incentive to him to come ashore and spend money in the town.

Farther west, Newtown is the only completely undeveloped creek in the Solent (if one disregards Pylewell, which is really only a swashway into Lymington). We should hope that really firm action would be taken to preserve it as it is, and that the provision of extra moorings elsewhere would reduce the likelihood of yachtsmen coming to Newtown for permanent moorings. As a relic of an ancient harbour (Newtown itself, now only a few cottages, was in the early Middle Ages the 'capital' of the Isle of Wight) it is of great interest, and surrounded as it is by

farmland, accessible only by a rough track, it is the perfect natural harbour. During Cowes week owing to the shortage of moorings elsewhere, it is as full as a cinema car park; the air is full of hearty voices cursing the next boat for anchoring too close, and the effect seems almost sacrilegious, like using a cathedral as a garage. Provided that the Association which preserves the harbour can be backed by authority, its character can be retained, and we do not think it is only selfishness on the part of the yachtsman which would condemn the slowly spreading caravan settlement at the head of the creek. The land round the lower stretches of the harbour is fortunately so difficult of access that it is unlikely to be 'developed' in this way, and by an absolute prohibition on providing petrol or even water supplies to the landing stage (however desirable that may seem at times) the harbour will remain a refuge for the comparatively small number of people who are prepared to row and walk for their supplies and who can get on very well without a club bar for a night or so.

Yarmouth within its limits is very well developed and managed, and it would be difficult to propose any great improvements. The general aim, therefore, should be to develop (more by intelligent co-operation between the various authorities and landowners than by any drastic control from above) the facilities of the various creeks and harbours so that their present characteristics become more marked, and in a way more specialized, so that a particular harbour will appeal more strongly to a particular type—Lymington, Yarmouth, Cowes and possibly Keyhaven to the man who enjoys company and (as far as is compatible with yachting) comfort and convenience; Newtown and the lower reaches of Beaulieu river to those who enjoy solitude and the company of herons and oystercatchers; and Wootton creek and the upper reaches of Beaulieu to the family cruising man, who enjoys something in between the two extremes. The present state is not so far from the ideal, and a certain amount of unobtrusive planning can perfect it, but without this the Solent shores and harbours will almost imperceptibly slip into the long chain of suburban development which extends for nearly 200 miles along the coast. Unlike the existing national parks, the Solent is in effect an arterial road running through unspoilt country; if we are not prepared actively to preserve this it can become another Kingston-By-Pass.



OFFICES AT BIRMINGHAM

ARCHITECT ERNÖ GOLDFINGER



1. south front of the factory offices at Sarnley. The parked cars stand on and when they are not in use are stored in a garage.

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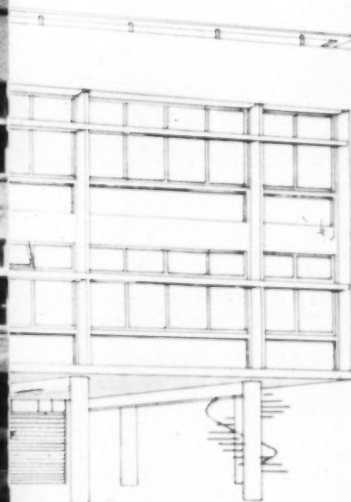
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OFFICES AT BIRMINGHAM

ARCHITECT

ERNÖ GOLDFINGER



1. south front of the factory offices at Shirley. The parked cars stand on land which will later be a garden.

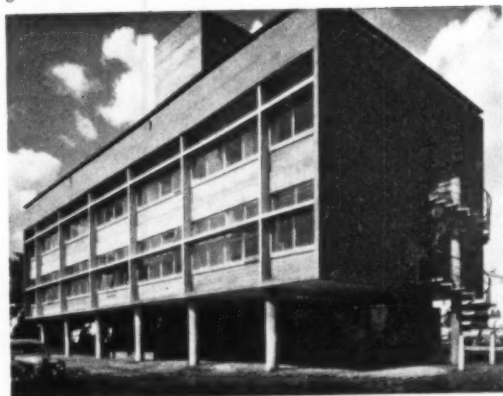


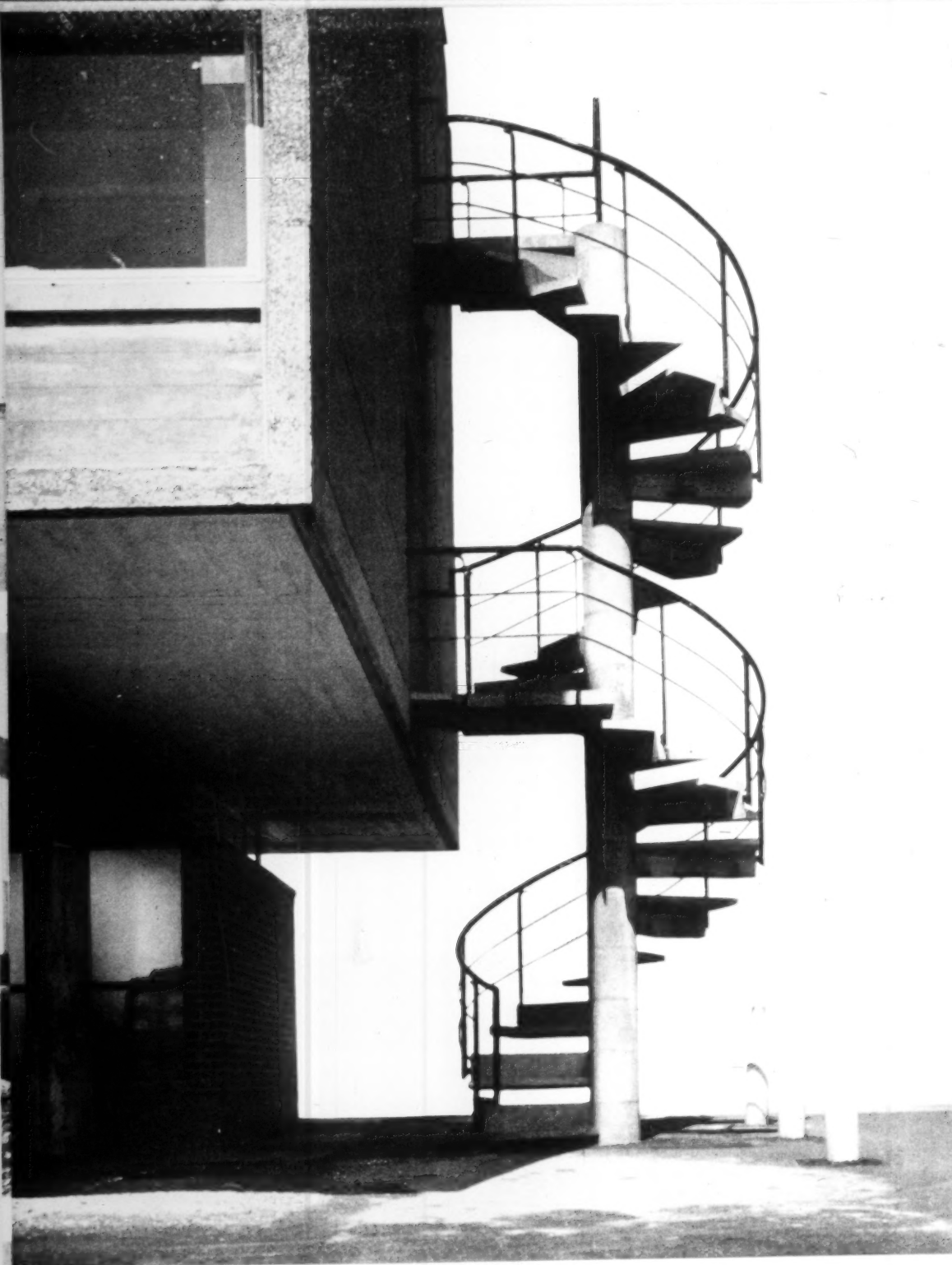
2

3

OFFICES AT BIRMINGHAM

2, the external spiral staircase on the east gable is of precast concrete.
3, general view of the south front, with the offices carried on columns above the open ground floor.
4, 5, the architect's working drawings, showing sections and parts of the elevations.



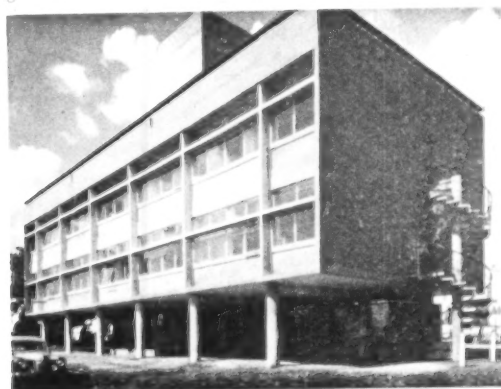


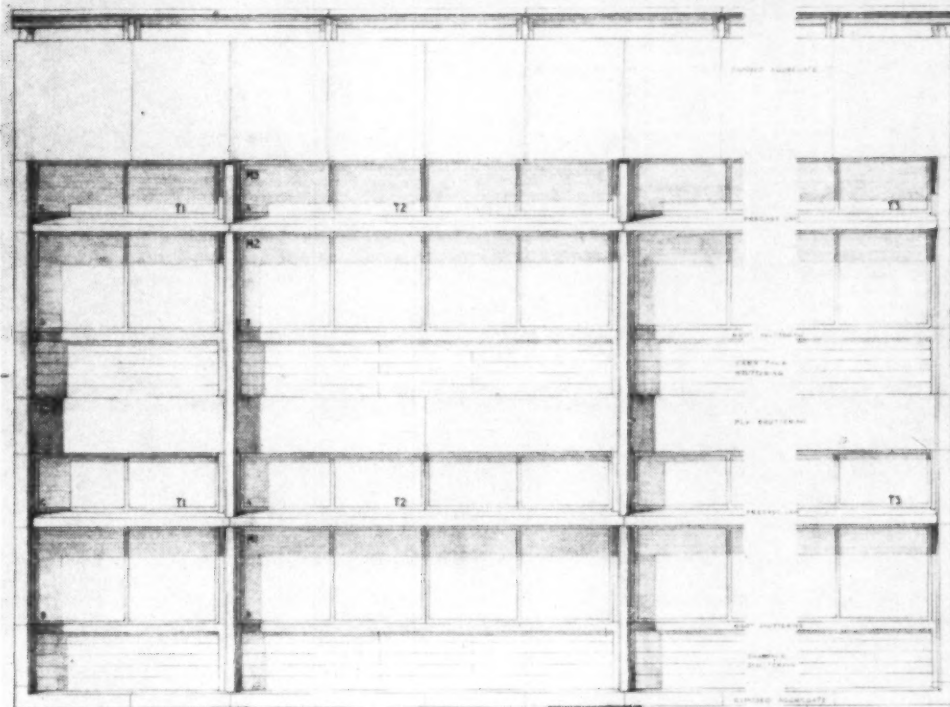
2

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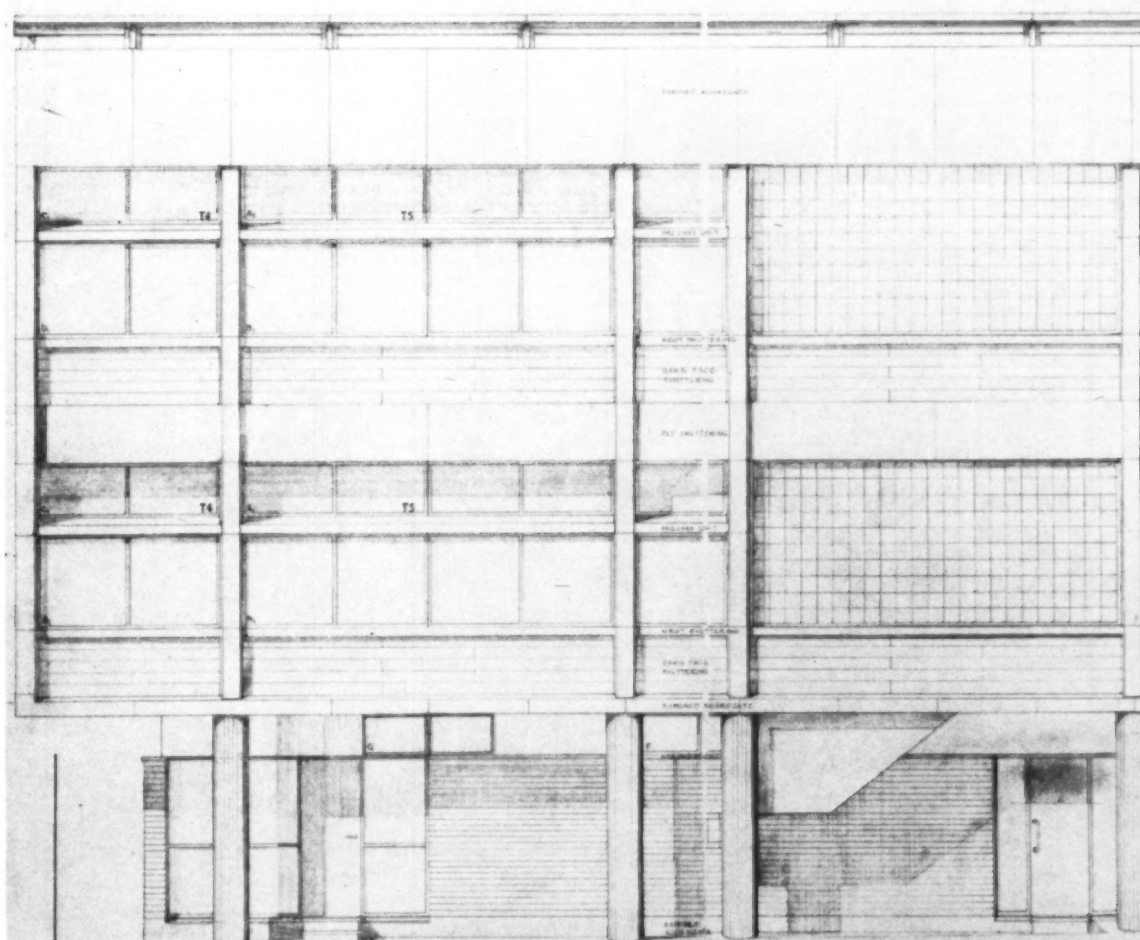




SOUTH ELEVATION

SECTION A-A

SECTION B-B



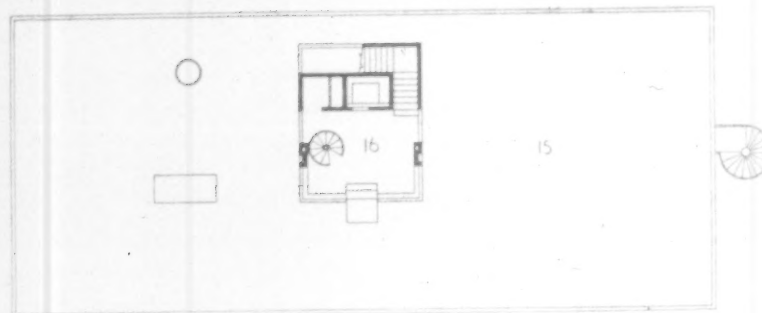
NORTH ELEVATION

SECTION C-C

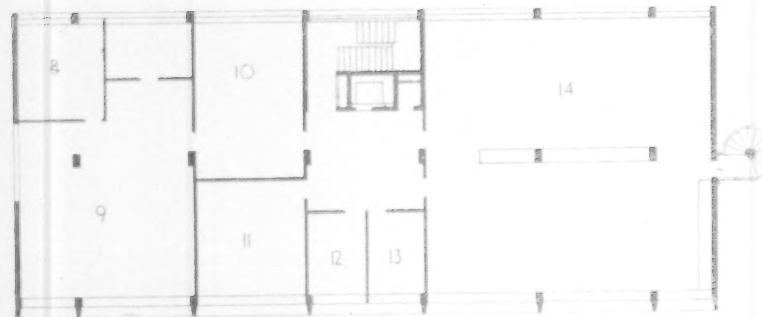
SECTION D-D

SECTION E-E

BEST ELEVATION



third floor

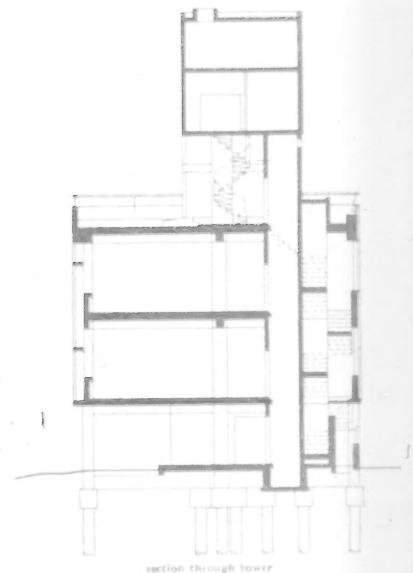


first floor

- key
- ground floor
1. women's cloakrooms
 2. entrance hall
 3. kitchen
 4. men's cloakrooms
 5. stores
- first floor
6. Power Sams machinery
 7. buyer's office
 8. filing
 9. sales manager
 10. secretary
 11. conference room
 12. general office
- third floor
13. terrace
 14. roof garden room

- 6, the roof terrace, with the glass walled recreation room. The square tower contains the lift motor room, tank room and document storage room.
- 7, the steel staircase from the recreation room to the tower.
- 8, detail of the recreation room, showing the rolled steel sub-frames which hold the plate glass.
- 9, another view of the tower.

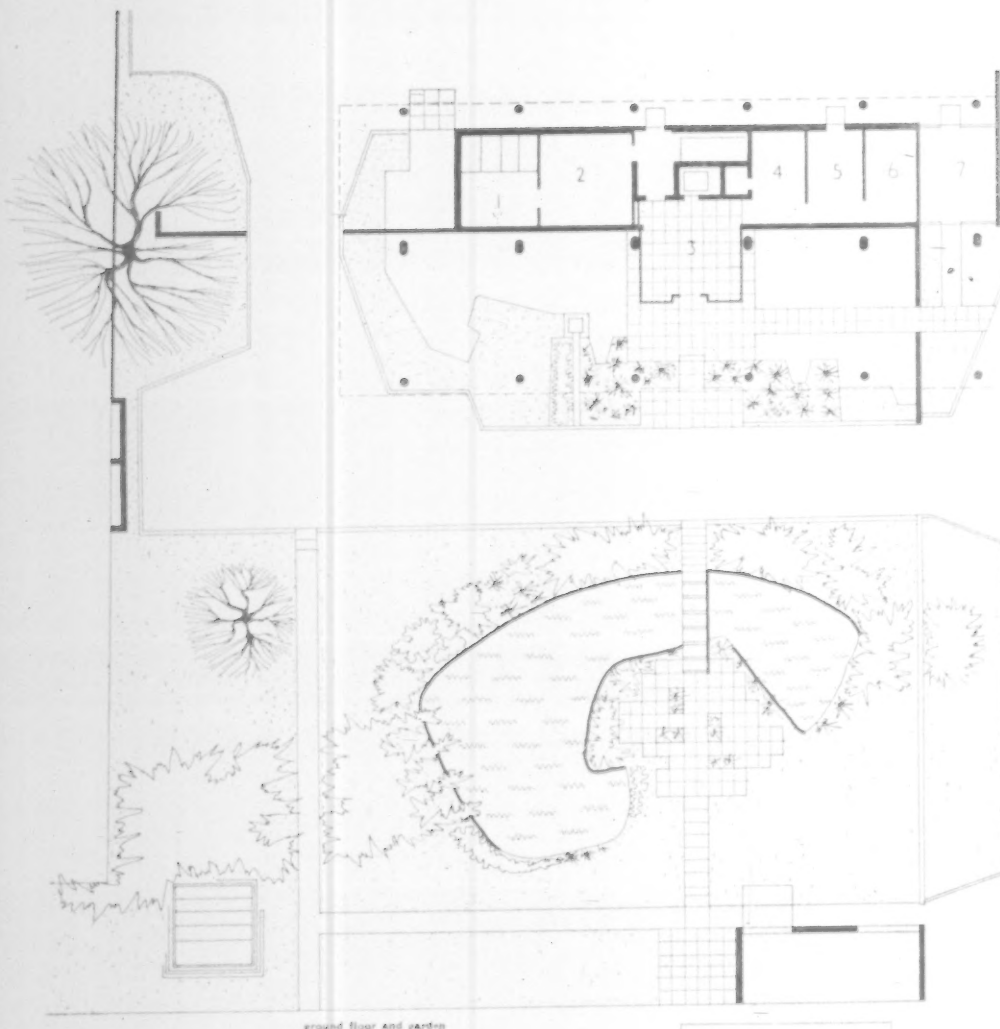
OFFICES AT BIRMINGHAM



section through tower

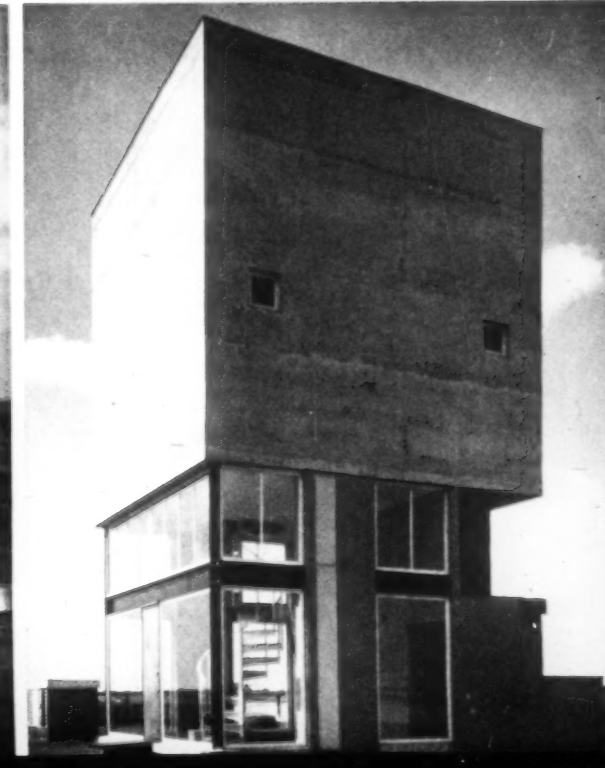
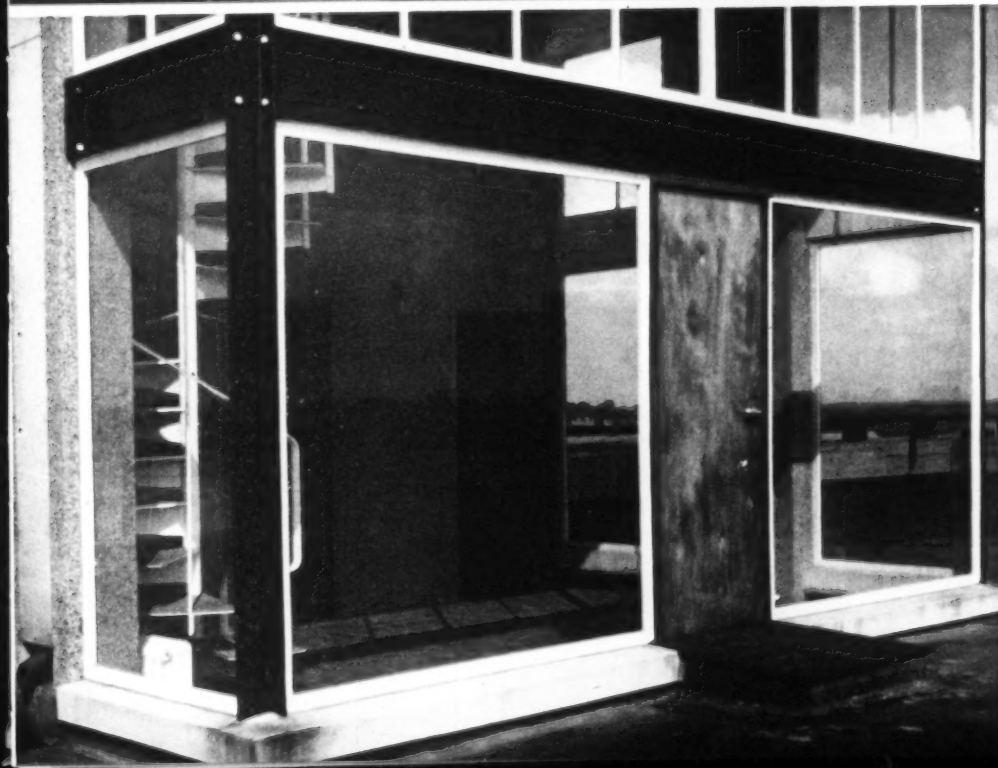
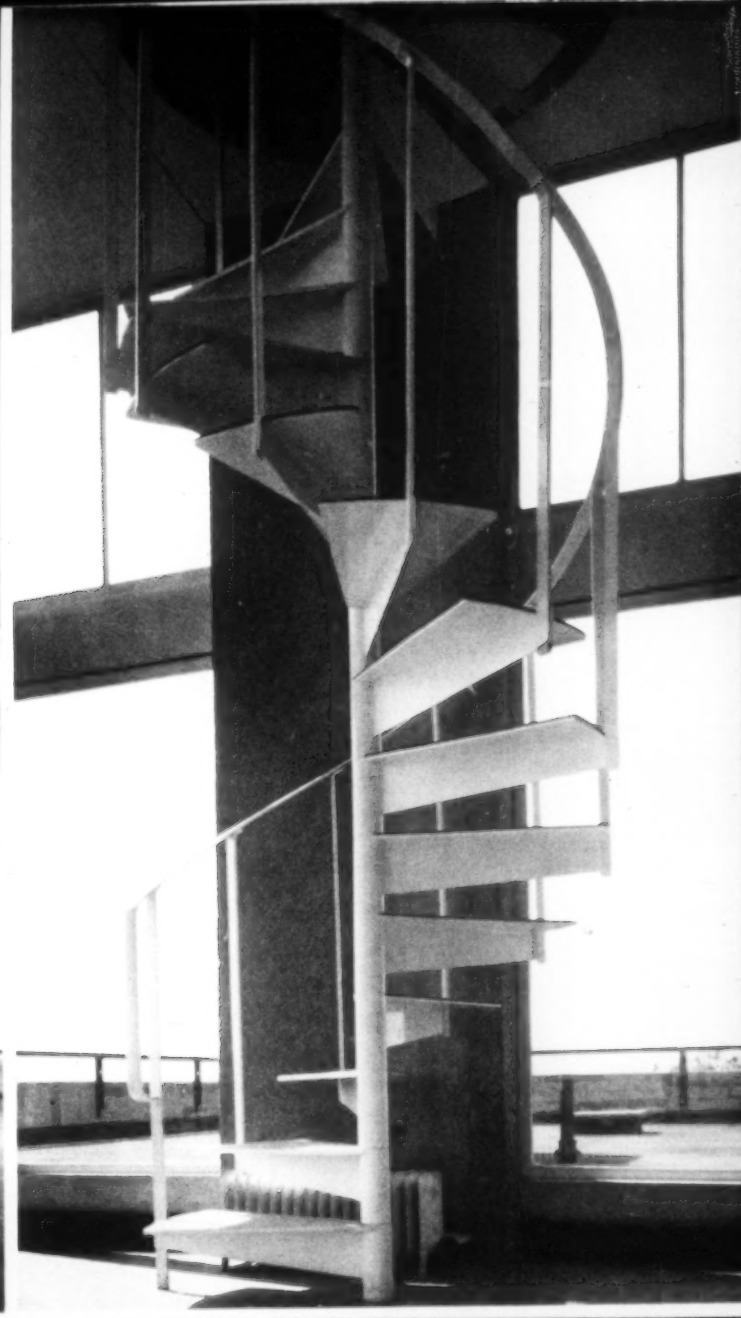
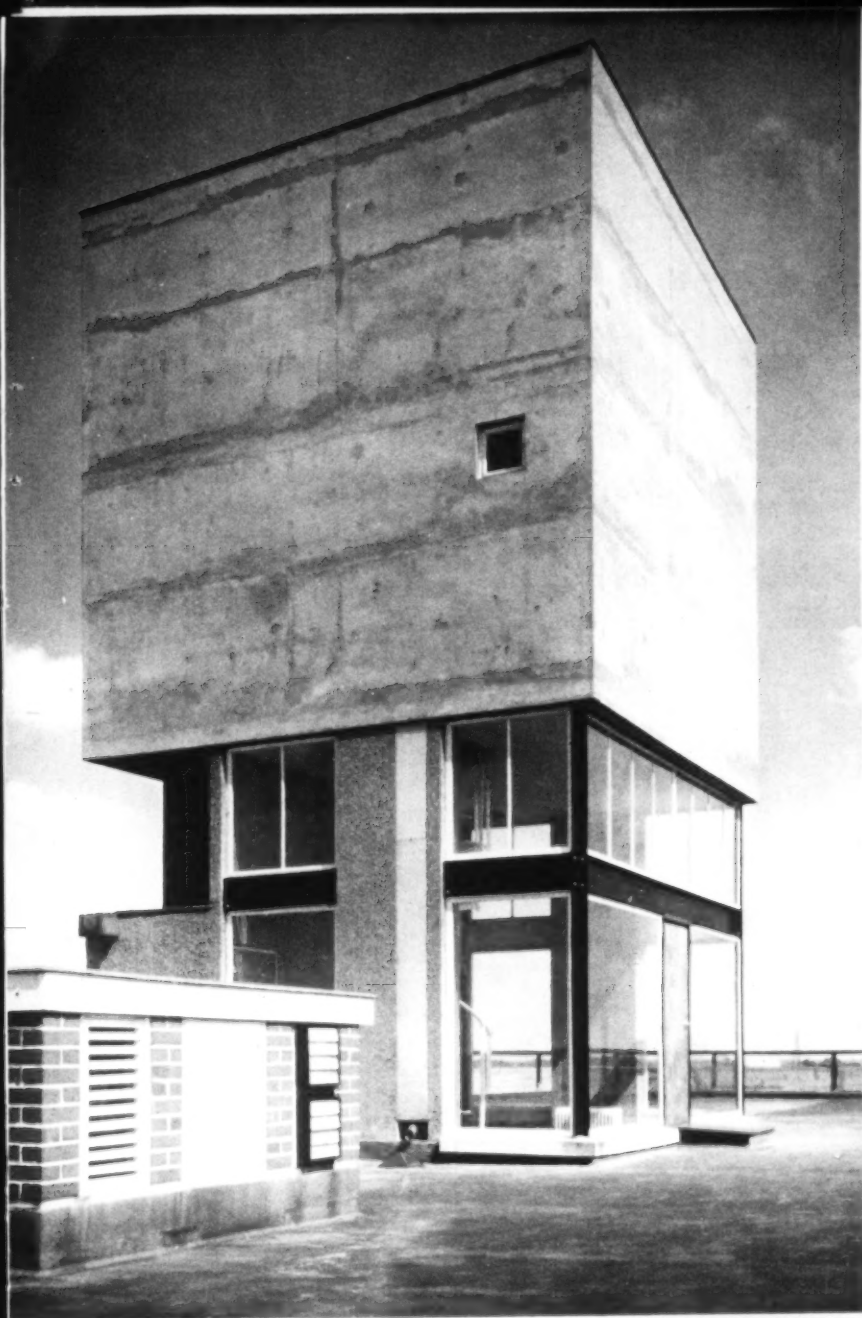


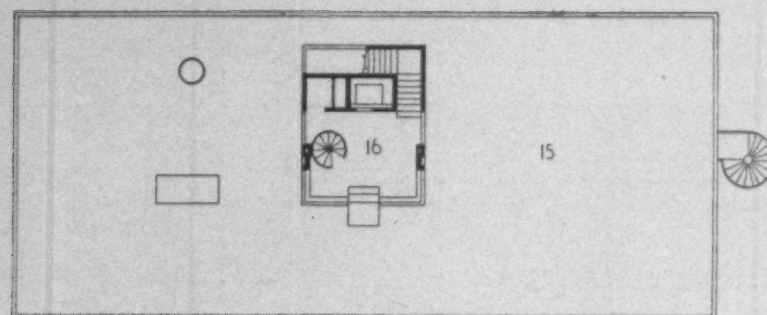
site plan



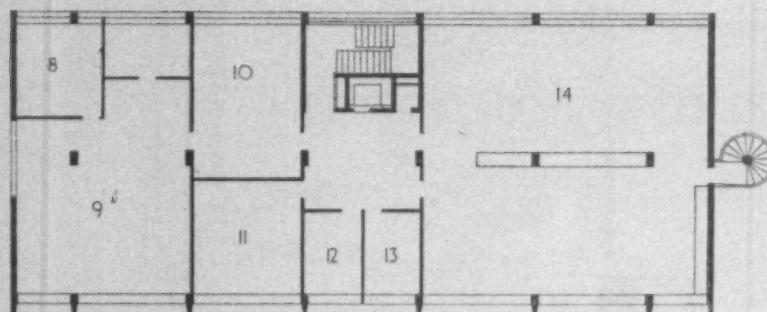
ground floor and garden

50 40 30 20 10 0 10 feet





third floor

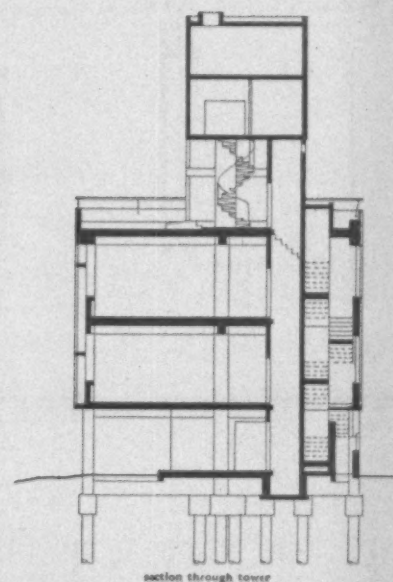


first floor

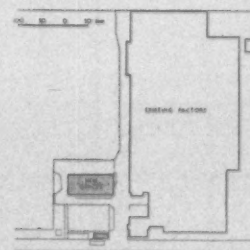
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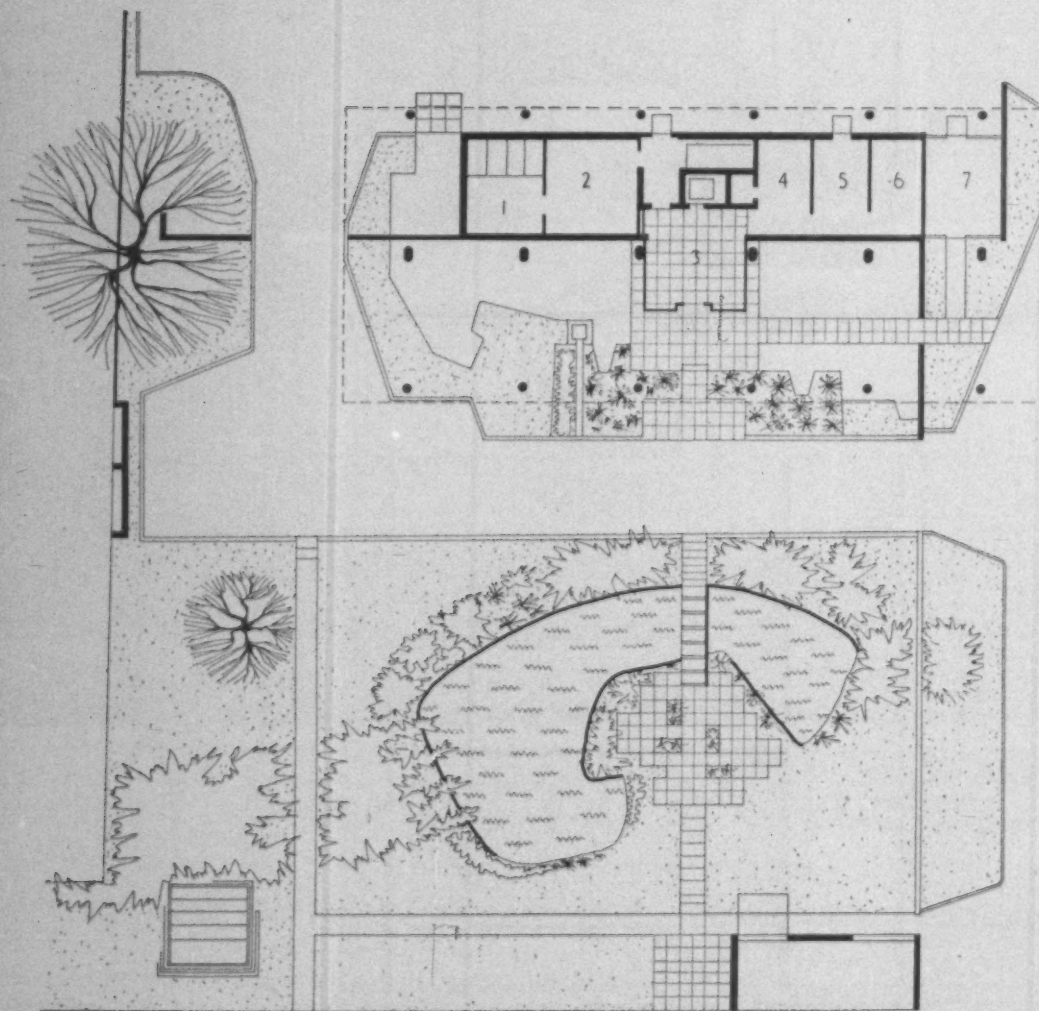
OFFICES AT BIRMINGHAM



section through tower

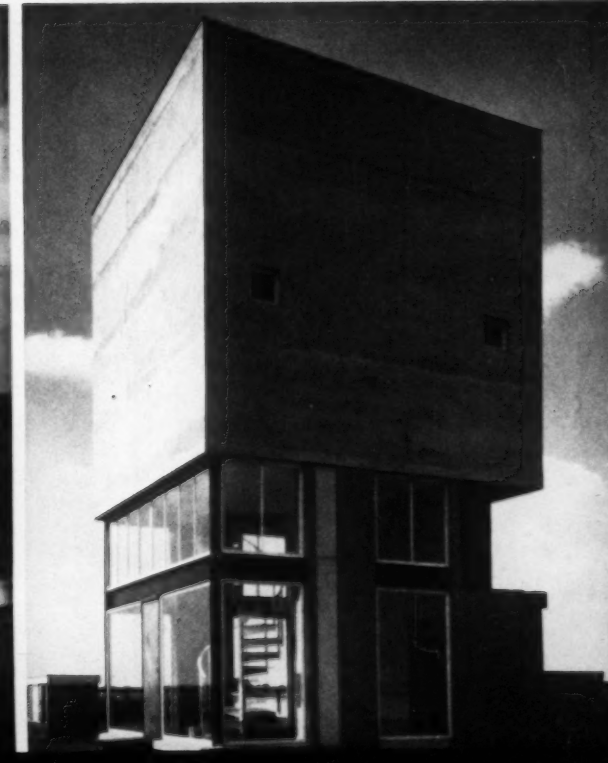
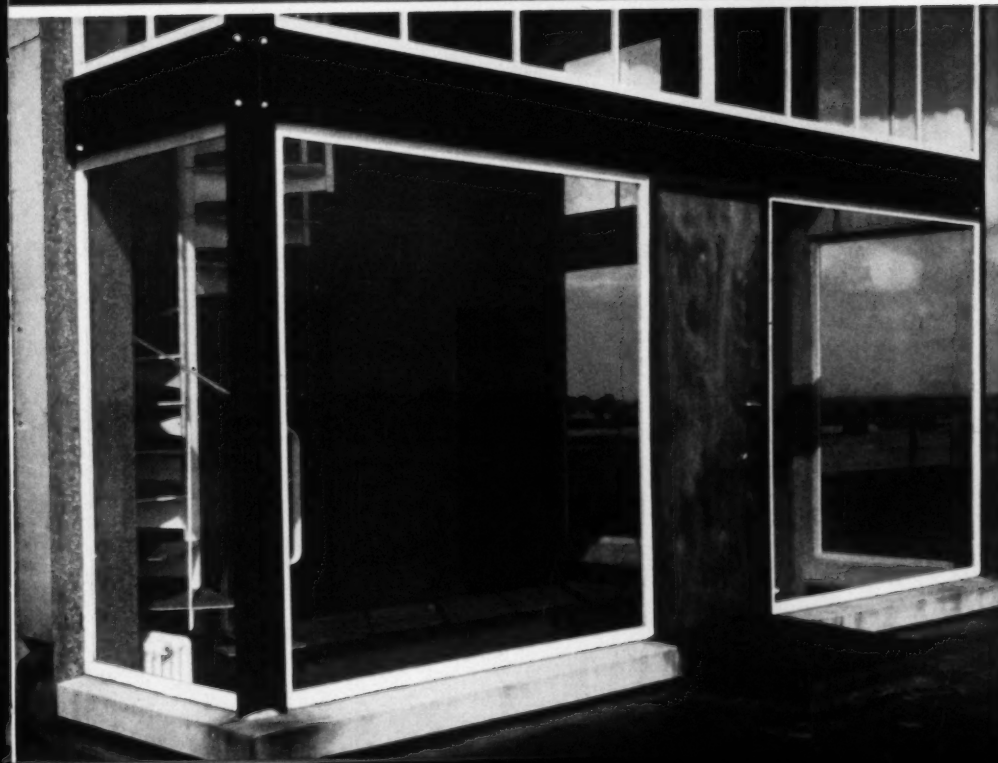
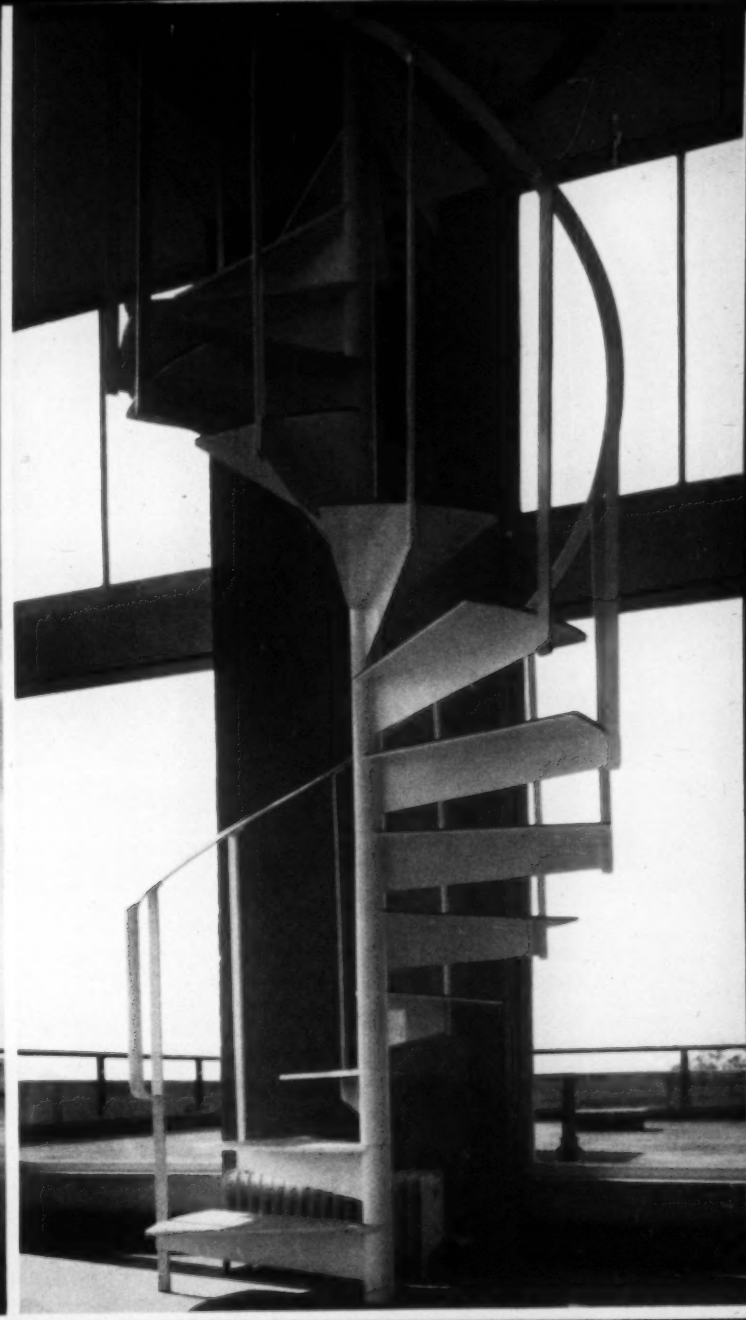
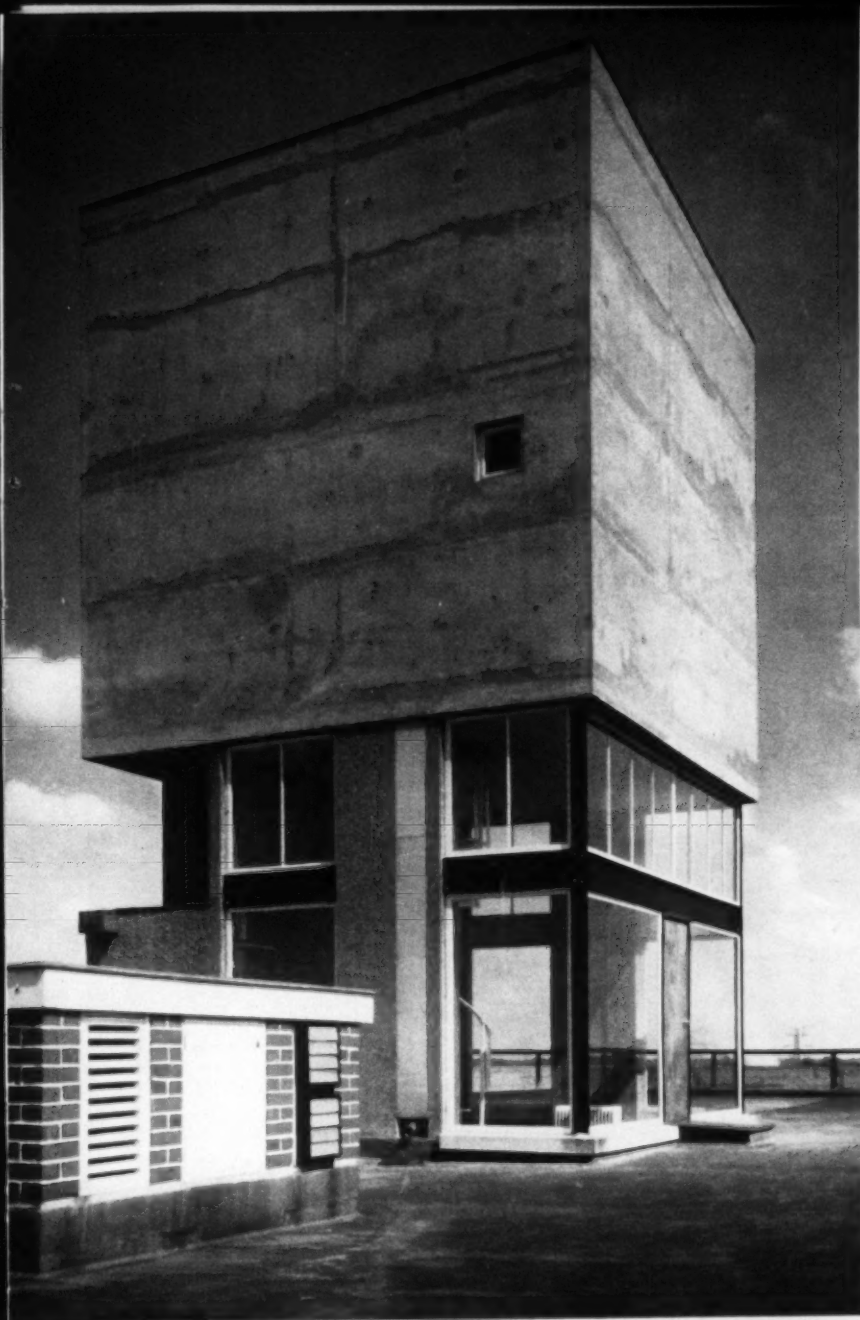


site plan



ground floor and garden

50 40 30 20 10 0 10 feet

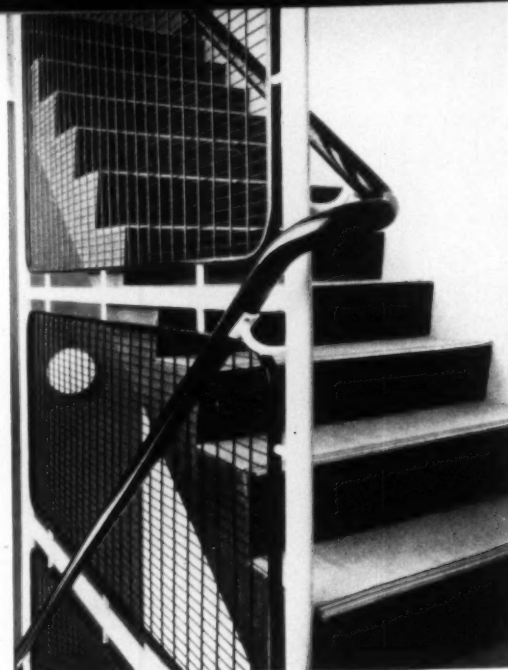
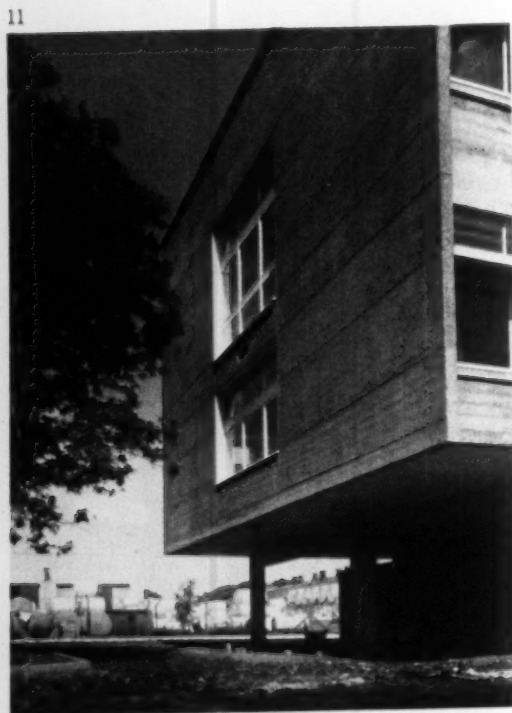


OFFICES AT BIRMINGHAM

- 10, the internal staircase.
- 11, the west elevation, showing the pattern formed on the concrete by the shuttering.
- 12, the main entrance, enclosed by plate glass screens, with an armourplate door. The floor is of green marble.
- 13, the reception desk in the main entrance hall.

This office block at Shirley adjoins the main factory, but was designed as a separate prestige building with landscaping, including an ornamental pool. The offices are all grouped on the two upper floors, carried on concrete columns and only connected with the ground floor by the staircase and lift. The ground-floor entrance and reception hall has a green marble floor and a wall of wax-polished Zebrano panelling, and is enclosed by plate-glass screens with an armourplate main door. The ground floor also accommodates kitchen and cloakrooms.

The first floor has a conference room, secretary's room and offices; on the second floor are the managing director's offices, board room and directors' suite, with a kitchen and small conference room. On the third floor is a recreation room opening on to the roof terrace, and the lift-motor room, tank room and document store form a small square block above roof level.



10

12

13

The building has been designed on a 2 ft. 9 in. basic grid and the construction is in situ reinforced concrete with piled foundations and prestressed suspended floors. All structural concrete is exposed, and on the east and west gable wall the aggregate is exposed and patterned by the shuttering. There is an external spiral staircase of reinforced concrete. The floors in the first-floor offices are of thermoplastic tiles, on the second floor they are cork tiles and in the recreation room black quarry tiles.

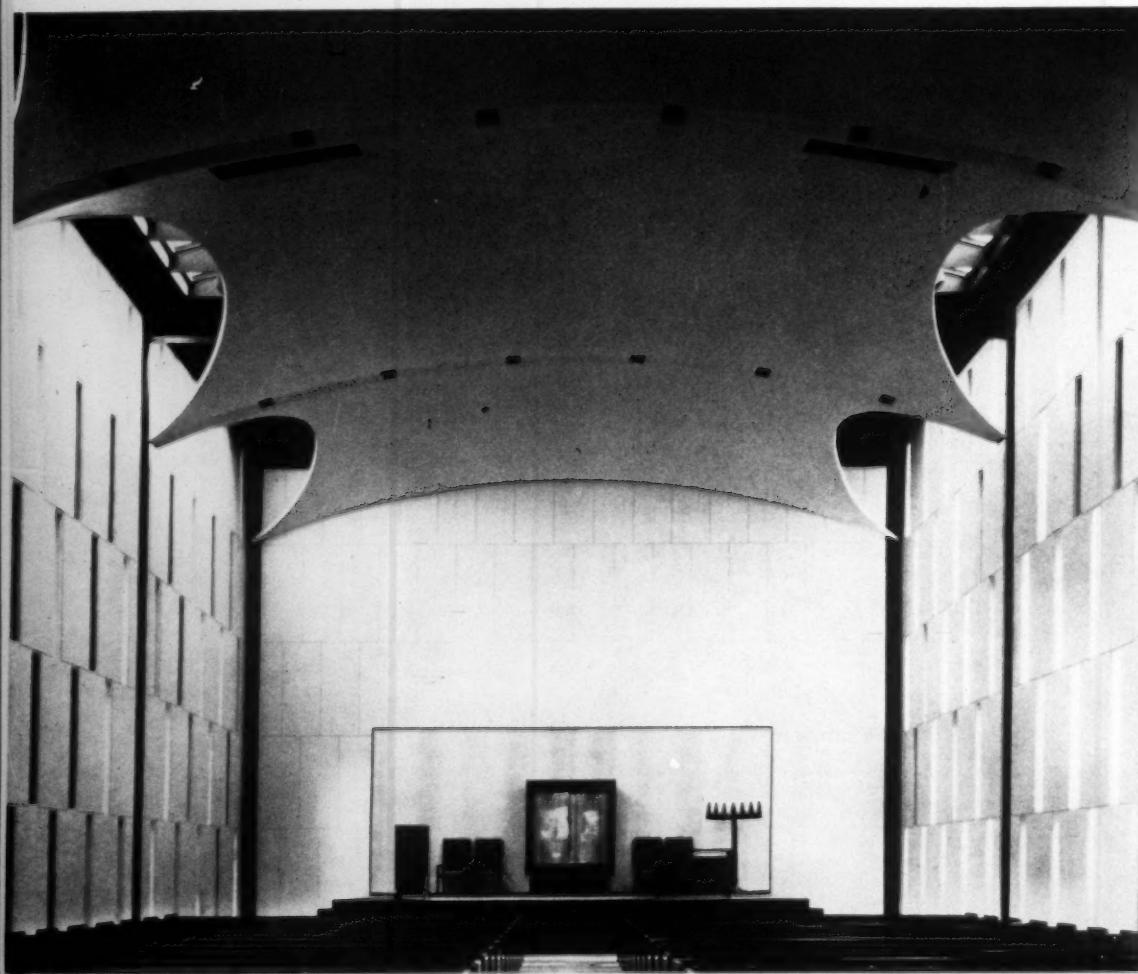
Heating is by means of calorifiers supplied by the factory boiler-house, heating convectors and some radiators on the ground floor, and a calorifier also provides hot water. Vertical services are housed in ducts in the columns. All windows on the south and north are designed with photobolic screens* to give greater daylight penetration.

* Top-lights set back behind a white-painted ledge. See 'Offices in Albemarle Street,' AR February, 1958, page 119.





The flat saucer dome of the Breakfast Room in Sir John Soane's Museum is an early, but significant, break with the tradition of the ceiling as a monolithic closure — light wells between the vault and the wall imply another cover at a higher level, as with the ceiling of Philip Johnson's Port Chester synagogue, below. The structural status of Soane's ceiling is arguable, but Johnson's is emphatically a suspended ceiling of the sort discussed in Michael Brawne's article, opposite.



Michael Brawne

LOOKING UP

SUSPENDED CEILINGS AS AN ELEMENT IN INTERIOR DESIGN

When it became necessary to house the convolutions of pipes and ducts which form the heating, cooling, ventilating, lighting, communication and fire protection systems inevitable in even so simple a space as that enclosing a dozen young women typing and telephoning, it soon became obvious that the ceiling was the only place for them. The inevitable result was visual chaos. It was found, however, that the confusion could easily be obliterated by a suspended membrane which, conveniently, was also able to reduce the general noise level. The suspended ceiling, as we know it, thus became a new and accepted building element; the easy answer to a series of complex and related problems. Until its advent, the surface overhead had often been dramatic and decorative: mosaic and fresco, pompeian plaster and lincrusta. There is, of course, no reason why the provision of services and visual pleasure should be mutually exclusive, although rather too many buildings testify to the contrary. It would seem that too frequently the care given to the ceiling has not gone beyond making sure that the different parts from the catalogue fit together. The purpose of this article (and, indeed, of the two articles on 'Suspended Ceilings' in the Skill section which should be read in conjunction with it*) is therefore to draw attention to a neglected surface. The ceiling is, after all, an important part of the visual field; in the past it has in fact been accepted as giving the architect one of the most challenging opportunities. Today others certainly think this. A glance at the rich variety of products made for ceilings displayed in the Skill articles on Suspended Ceilings shows that this section of the building attracts a great deal of commercial attention, much of it well conceived. There is, evidently, money in the ceiling. Yet even the best products fail to give that lasting satisfaction which is felt when a building form achieves the level of architecture; nor, it would appear, when the

* The first of these appeared in the July AR, page 59; the second is to be found on page 201 of this issue.

matter is looked at carefully, is the functional performance of these ceilings as high as one might expect. These two aspects, though distinct, go hand in hand; and perhaps the ceiling will not perform visually or functionally as it should, until it is considered as an important and form-giving element of each design.

The multi-storey office block poses the problems of the suspended ceiling in its commonest form. The expensive and therefore overcrowded floorspaces obstructed by office paraphernalia, the outer walls pierced by windows, the inner walls non-existent or forever moving as staff groups and re-groups, only the ceiling remains to provide a standard of environmental comfort which may have to be of a relatively high order. Visual tasks may be exacting requiring both high levels of illumination and lack of contrast between task, surround and light source; the noise produced may be considerable and will need reduction for reasons of comfort and communication; winter heating will be essential but will only be needed for about eight hours a day; summer cooling may be necessary especially as intense light sources and electric business machines add to the heat and even such sedentary exertions as typing soon become uncomfortable. Apart from this, ventilation must be adequate to cope with tobacco and humanity. These are the relatively simple criteria of an office space. Laboratories, shops, restaurants and so on each create their own specialized conditions.

The choice of ceiling material, shape and construction is dependent on the methods used to provide this environmental control and itself considerably influences them. It should not therefore be undertaken haphazardly. 12 in. by 12 in. perforated fibre tiles on a 'patented' suspension system are seldom the only, and rarely a sufficient answer.

The great danger inherent in an architecture assembled from factory-made components is that

each set of elements, whether it be the curtain wall, the suspended ceiling or the movable partition, can so easily be considered in isolation. Yet the effect of these elements on each other and the building as a whole should not be underrated. Their relation is not only one of simple dimensional co-ordination, it is more fundamental than that.

Suspended ceilings, for example, are normally considered as obvious sources of artificial light. But it ought not to be forgotten that any ceiling surface will also influence the natural light conditions of an area receiv-

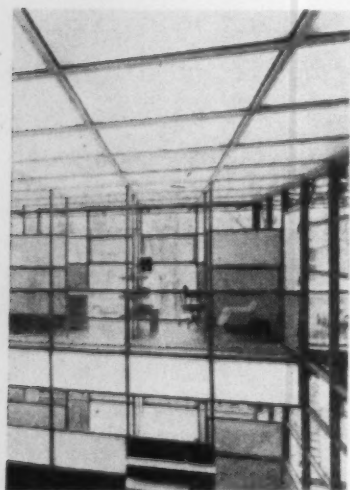
ing daylight. The reflective factor of luminous ceilings with plastic eggcrates, to take a common form, may be extremely low. Such a room will thus appear unnecessarily dark unless the lights are turned on. Similarly a ceiling composed of vertical fins or coffered recesses with luminous inserts will create large areas of shadow. Evidently certain forms of luminous ceiling demand that, once installed, they are used continually. This in turn poses the question that if illumination is to be provided entirely by artificial light, what reliance should in fact be placed on daylight? Even if for psychological reasons some kind of outlook is thought advisable, this may well take a quite different form from the transparency necessary for efficient daylighting. Thus the seemingly simple choice of a particular suspended ceiling has serious repercussions on the treatment of the elevation.

If, moreover, the gap between a louvred ceiling and the underside of the structural slab is a continuous open space (i.e. to house lamps and heating ducts) or itself acts as a plenum, partitions will fail to act as sound barriers. The main function of rigid partitions having thus been lost, it seems questionable whether they need be retained. If office space is not to be subdivided and if there is no need to rely on daylight for illumination, the traditional shallow arrangement on either side of a corridor will no longer be necessary. Much deeper undivided areas become the logical answer. These will in turn demand artificial ventilation which will itself modify the design of the suspended ceiling. The luminous ceiling, therefore, not only suggests certain elevational criteria, but also radically amends the plan form and service installation of the building.

Certain recent offices in the United States and elsewhere have accepted these conclusions. Except for shops, complete reliance on a luminous ceiling is, as yet, infrequent in this country. The suspended ceiling is thought of primarily as a sound absorbent area; but here again, choice is not merely a matter of deciding between dots, stripes and a travertine finish.

Sound absorption to be effective can only be determined when the use of the space is known. A suspended ceiling over the workshop floor of a factory may be far from helpful if its absorption coefficient is low for the particular frequencies at which the machine noise is loudest. The value of the absorption coefficient at 128 cycles, a value which will almost certainly be critical, can vary between .09 and .53 for a perforated cane fibre tile depending on its thickness and mounting. The too frequent reference to coefficients at 512 cycles may be a useful shorthand but it may also be very misleading.

Precise function is just as important a determinant in an office building—the private office, the conference room and the clerical space each demand separate treatment. In the private office there will probably be

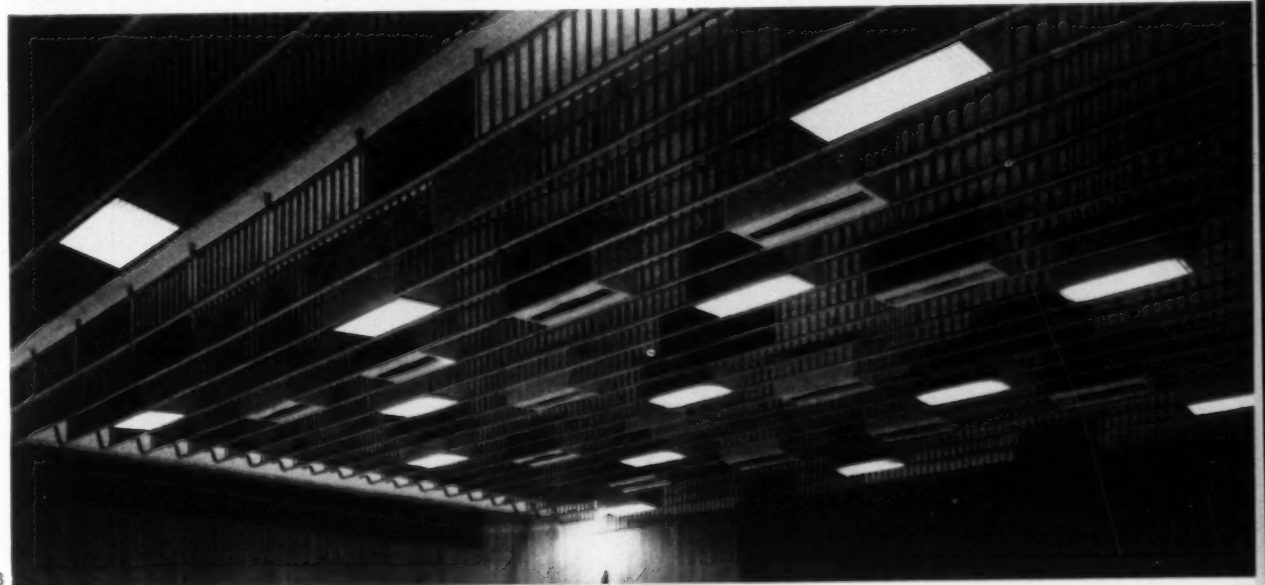


1, the additive architecture of the 'Unistrut' Experimental Building at the Michigan University: additive space can, through the repetition of similar materials within a strictly coordinated structure, create the unity aimed at in curvilinear spaces as 21.

(continued on page 169)



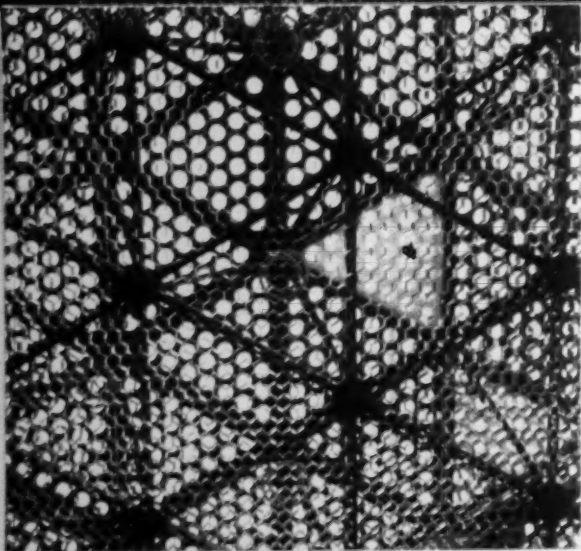
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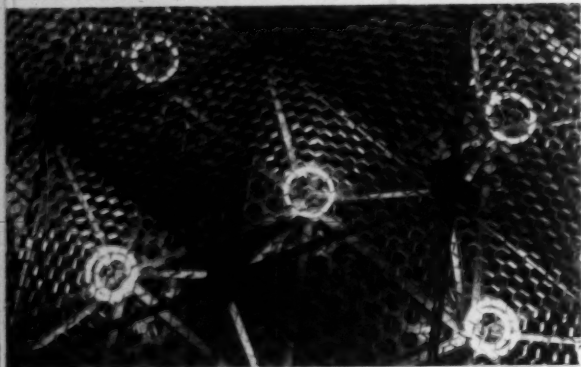
3

the additive ceiling at its most basic—
2, Skidmore, Owings and Merrill's
Connecticut General Life Insurance Com-
pany where ducts, lights and services are
concealed by a deep grid.

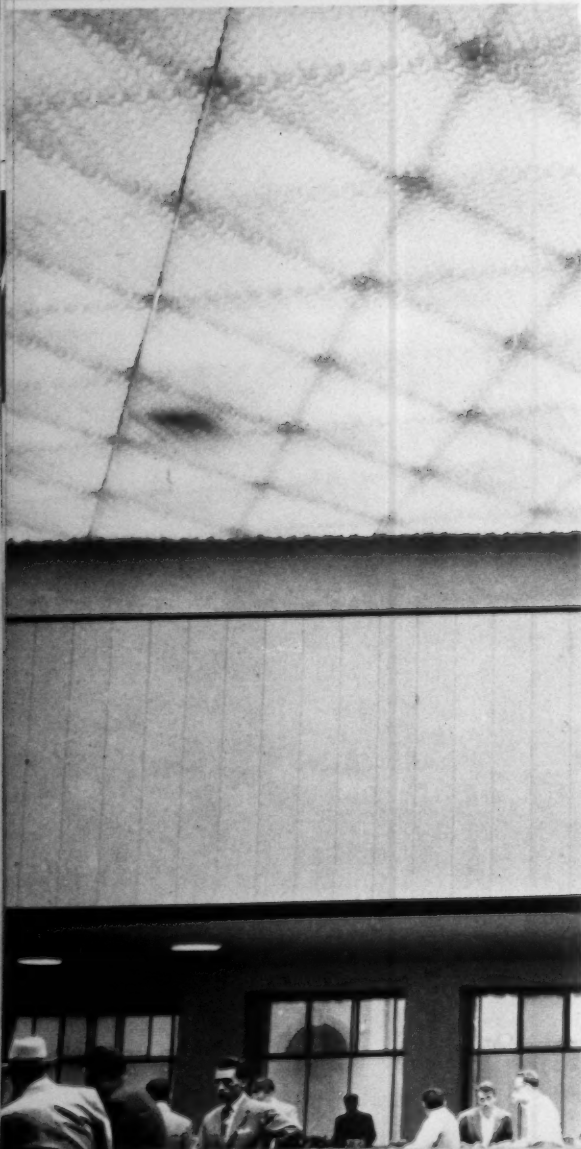
3, Finn Juhl's Trusteeship Council Chamber
at the UN where the service elements form
a coloured three-dimensional pattern which
becomes a dominant and lively feature of
the room. Both examples make a virtue of



4



5



6



7

the depth needed to house the equipment and create a new spatial effect—the pergola brought indoors.

6. Studio Valle's Bank at Udine has translucent honeycomb diffusers added to the bottom chord of a space frame and these act as luminous ceiling both 4, during the

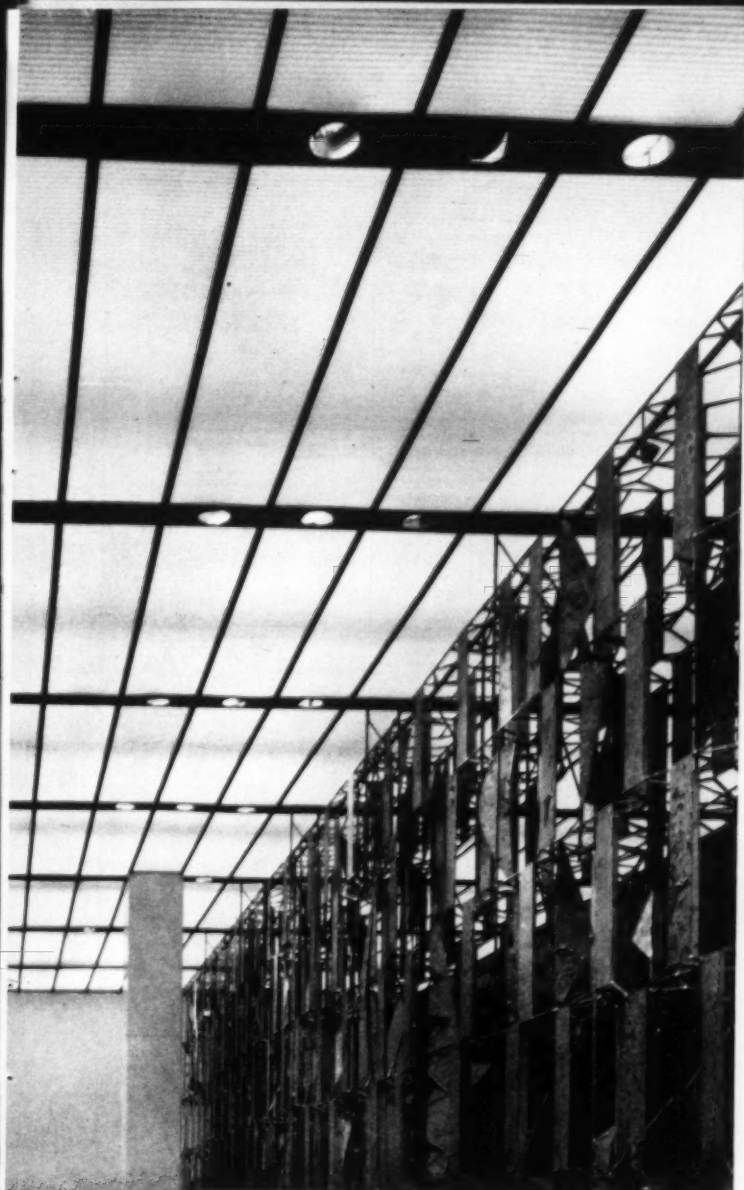
8

day, and 5, at night, yet still reveal the intricacies of structure.

7. Saarinen's G.M. Technical Center, Michigan, has an elegant 'universal' service ceiling, developed with the Wakefield Lighting Co.

8. the entrance hall at 383 Madison Avenue,





9

looking up



10



11

NY, gives more rapid and less subtle variations by changing the colour of the light behind different areas of the ceiling.
9, Skidmore, Owings and Merrill's Manufacturers' Trust Bank, NY, successfully

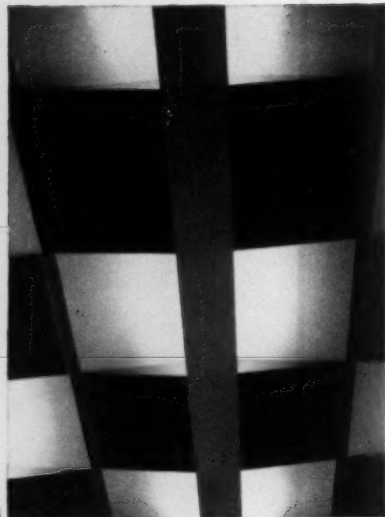
combines a high level of general illumination with directional lighting for Bertola's gilt screen.
10, timber ceiling by Hiroshige Ohe in the Miki Building, Tokyo and,

11, by Breuer in the Bijenkorf, Rotterdam, where the lighting within the deep fixed grid is related to sales areas.
12, a suspended ceiling at G.M. Technical Center shows the application of the pressed

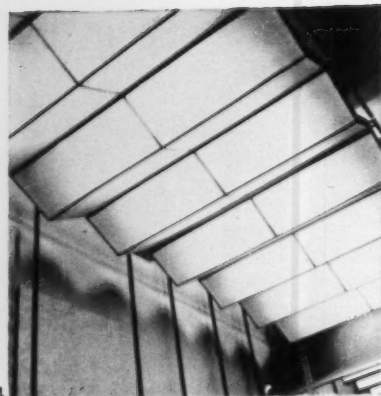
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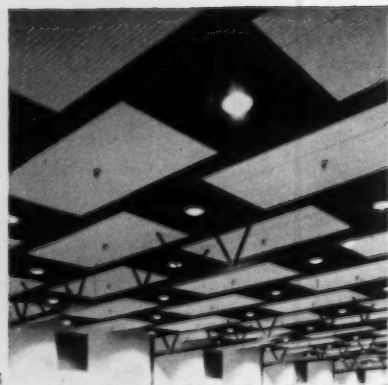
looking up



13

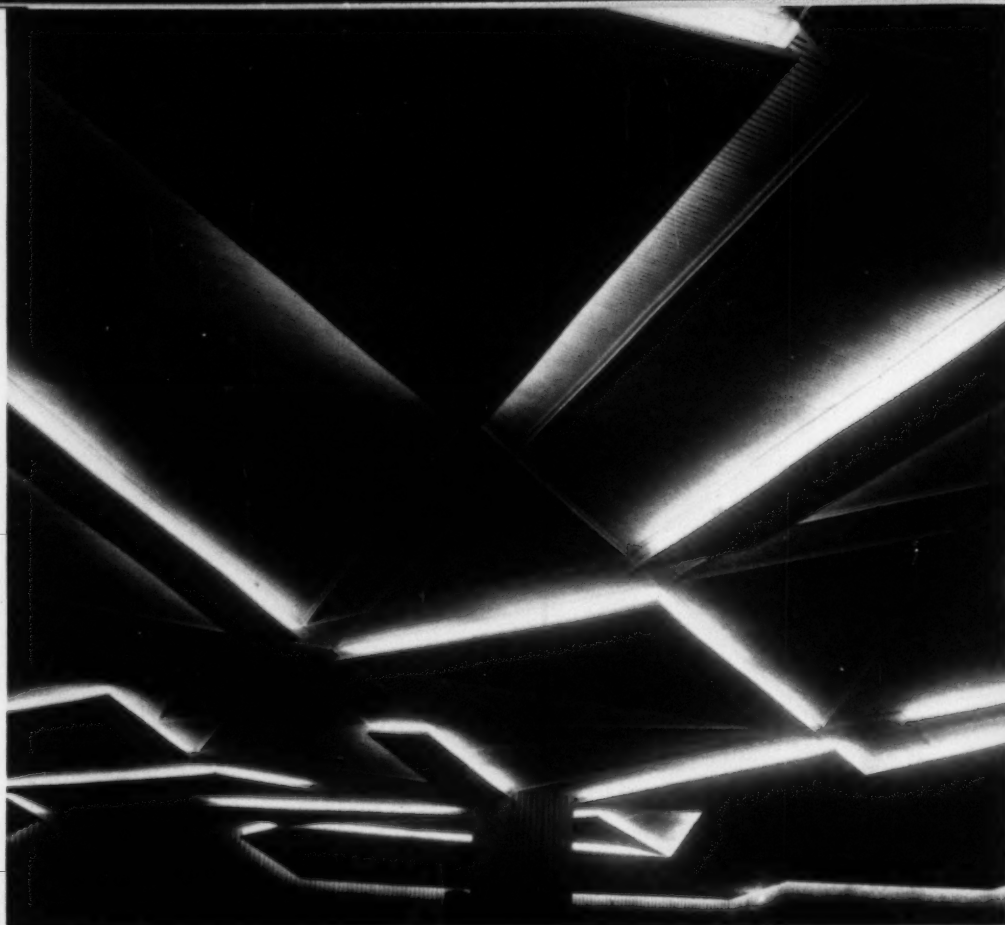


14



15

metal technology of the automobile to a suspended ceiling.
13, Frederick Gibberd's concourse at London Airport,
14, shop in Rome, by Giorgio Coletta.



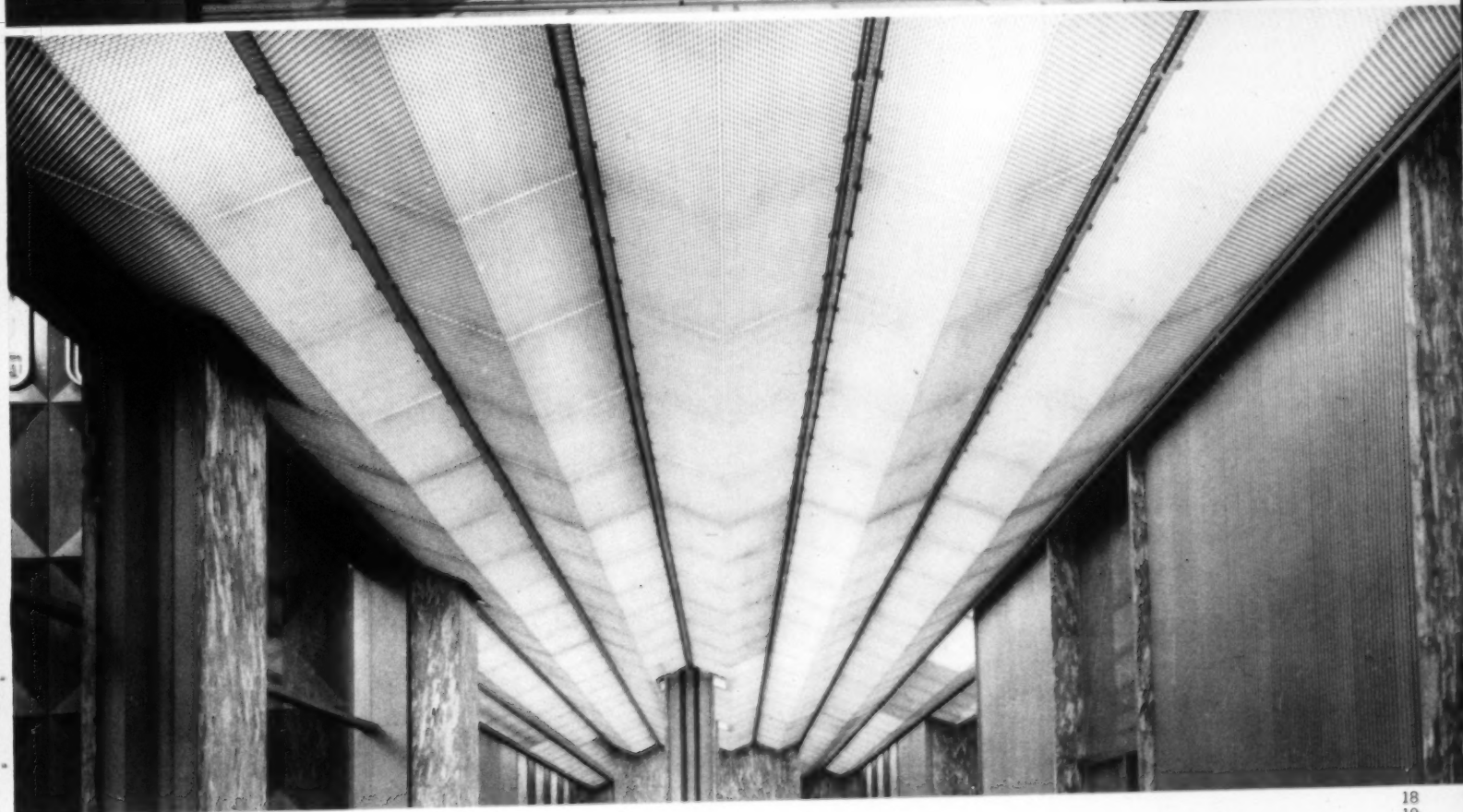
16



17

15, Vernon Russell's cafeteria at the Lockheed Factory in California, an attempt to give sculptural feeling to the ceiling with simple elements, in 15, merely asbestos sheets, web joists, sprinkler heads and lights.

16, conference hall by Aldo della Rocca in Rome, where the limits of space are confused by glare and the irregularity of the ceiling formed by the random juxtaposition of different elements.

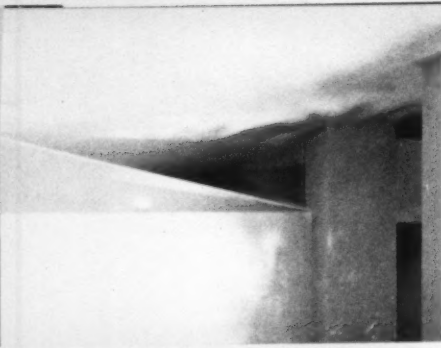


17, Ford Motor Car Central Office Building, Dearborn, where more complex patterns are achieved by the regular intertwining of identical units.
18, the entrance hall of the Tishman

Building, Fifth Avenue, N.Y., by Carson and Lundin, has a ceiling of cloud-like metal fins by Noguchi which are a highly successful excursion of a sculptor into industrial design.

19, the lobby of the Alcoa Building, Pittsburgh, by Harrison and Abramowitz; the suspended aluminium mesh is also an early attempt at the dapple effect now so often used by Edward Stone.

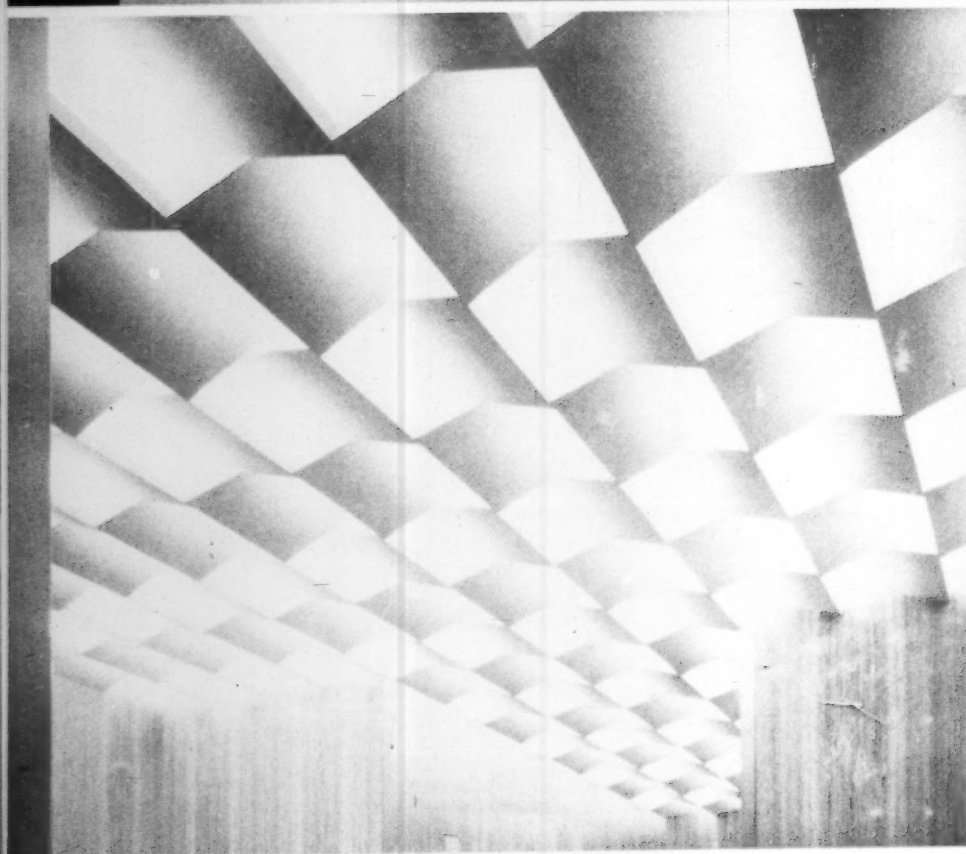
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19



20



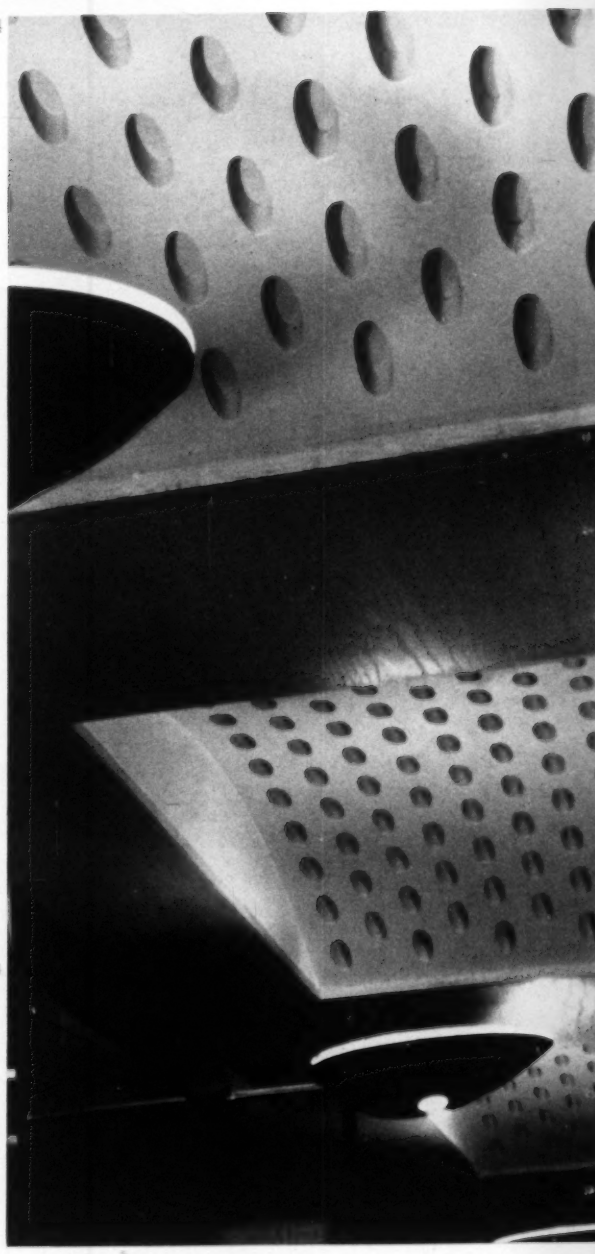
21



22



23



21

The suspended ceiling, although technically always an added element, need not be left out in the early consideration of the room.
20, Knoll Showroom, Milan, with its folded planes over an equally divided room.
21, World House Gallery, New York, by

Kiesler and Bartos.
22, Bank at Tulsa, Oklahoma, by Carson, and Lundin.
23, Philip Johnson's Guest House, New Canaan, Conn.
24, Tea Bar, Lancer Regent Street, by the

Design Research Unit.
21 and 23 demonstrate that wall and suspended ceiling can achieve a sculptural unity which becomes the regulating element of the space.

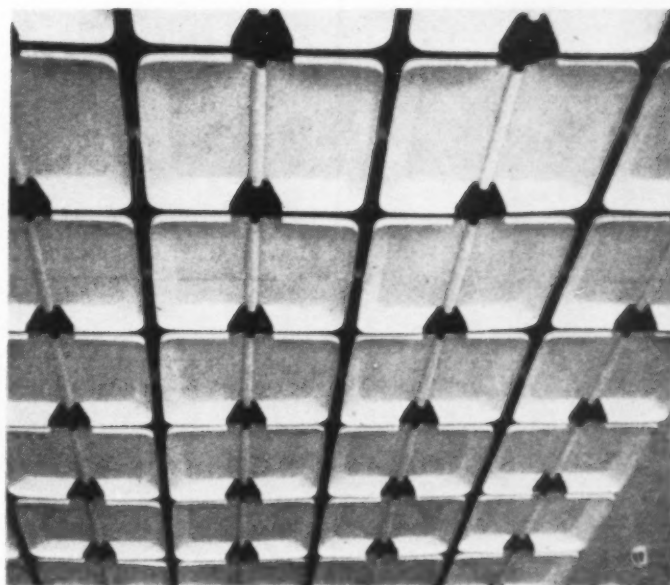
continued from page 162]

little need for absorbing any of the sound generated within the room. Design must concentrate on excluding noise from neighbouring areas. Such sound reduction can only be achieved by mass and the blocking of all connecting air spaces. Partitions must either be taken up to the underside of the structural slab and fit tightly or the suspended ceiling must be composed of relatively heavy sound reducing elements. The difference between the average noise level in a large office and that acceptable in a private room may be 20 to 25 decibels. Sound absorption of this order is unlikely to be achieved by a rigid vinyl diffuser or $\frac{1}{2}$ in. thick cane fibre, but could, for example, be realized by suspending sheets of 32 oz. glass with their edges sealed. In the conference room sound absorption will most likely be provided by a carpeted floor and wall linings and the ceiling may have to be of a reflective material; it may also be advisable for this surface to be faceted so as to diffuse sound.

The most complex problem occurs in the general office space. Here two criteria ought really to be satisfied: the general noise level, and particularly noises at some distance, should be reduced; but at the same time the level of speech must not be lowered to the extent that it is overlaid by the background noise. Unfortunately the flat ceiling of absorbent material tends to work against these conditions, since the degree of absorption is proportional to the angle of incidence of the sound wave. In other words, the ceiling will be most efficient in relation to noise directly underneath it and least efficient in relation to distant noises hitting it obliquely—a situation, the reverse of the ideal. This problem can be overcome by turning the absorbent material through 90° and suspending it as a series of fins. Saarinen's General Motors Technical Center, 7, and Skidmore, Owings and Merrill's Connecticut General Insurance Building, 2, have adopted this solution with results which seem both visually and functionally highly successful. The suspended fins can also act as light baffles and, in the case of Connecticut General, actually provide sufficient visual cut-off to conceal service runs. In view of the simplicity and usefulness of this arrangement it seems surprising that it has not yet been used in this country.

So far the suspended ceiling has only been discussed in terms of certain notions about light and sound. It has often, however, to perform tasks in connection with heating and ventilation either separately or simultaneously with the first two. The ceiling developed in conjunction with the Wakefield Lighting Company for General Motors Technical Center incorporates luminous panels, sound absorbent baffles, air-conditioning outlets, fire sprinklers and partition fixings and is probably the best co-ordinated building element available 'off-the-peg.' The apparently divergent demands of these separate functions need not, it would seem, conflict.

Some suspended ceilings, like Aalto's delightful inverted trays at the Social Security Building in Helsinki, 25, concentrate on fulfilling only one function, in this case radiant heating. Others like the standard suspended ceiling of perforated metal tiles combine heating and ventilation with some sound absorption

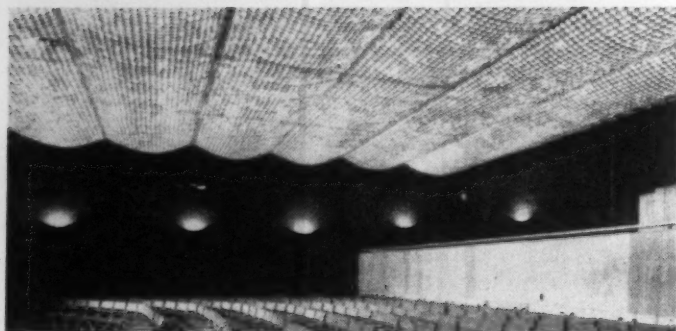
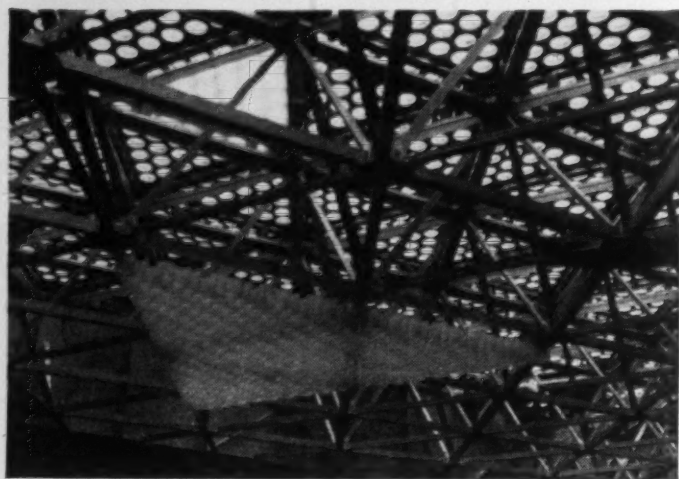
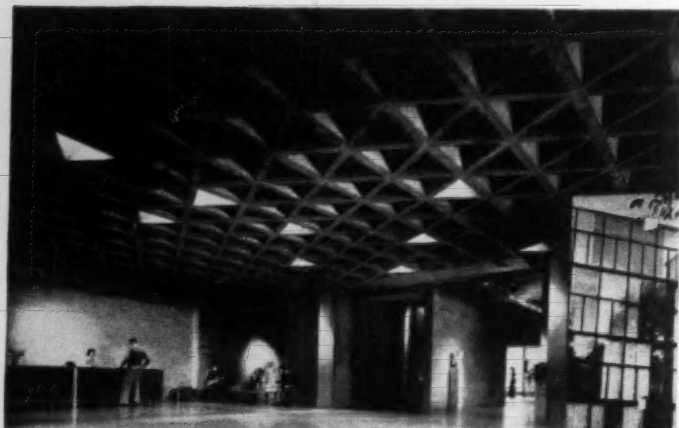


25, restaurant at the Social Security Building, Helsinki by Aalto.

though, of course, sound isolation becomes impossible since the whole of the hollow space between ceiling and slab is used to convey hot air. The merits of using the overhead plane as a heating element are debatable since the desirable heating gradient assumes greatest warmth at floor level. The reverse naturally applies if summer cooling is considered and the ceiling is, therefore, an excellent location for air diffusers or radiant cooling panels. The functional complexity of such multi-purpose ceilings need in no way be a justification for second-rate solutions; it can, on the contrary, if treated with wit, create the sort of visual richness which Finn Juhl achieved in the Trusteeship Council Chamber at the U.N., 3.

The problems of the suspended ceiling are impossible to treat in isolation, for not only is the ceiling itself frequently an intricate combination of several functions, but there is also a continual reference back to the basic assumptions governing the building: to plan form, to structural choice and economy in relation to the depth given up to the ceiling, to cladding, to space sub-division, to maintenance and fire protection. On some of these aspects the architect is able to get specialist advice, though the number of such consultants in this country independent of particular business organizations is relatively small. The meshing of the separate and possibly conflicting advice given by these consultants is still the architect's responsibility. In the last resort it should, perhaps, always remain so. But there does seem a place for a group practice covering the whole range of specialist fields which could advise an architect at the earliest possible stage of design on the implications of the alternative choices. It is this sort of fundamental advice which it is so hard to get at the moment.

The most encouraging recent development in the use of suspended ceilings has not been the refinement of technique—radical technical changes await the commercial introduction of such devices as electroluminescence—but the marked extension of its visual vocabulary. This extension has been brought about by the belated awareness that a suspended ceiling is not



26, entrance hall, Yale Art Gallery, by Louis Kahn. 27, bank at Udine by Studio Valle, during construction. 28, auditorium at the Fine Arts Center of the University of Arkansas by Edward Stone.

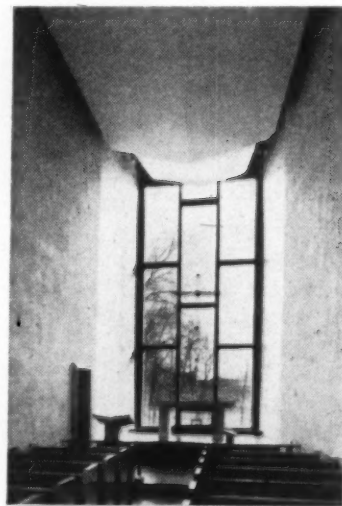
an imitation plaster surface with a smooth trowelled finish, but more often an assembly of a large number of separate pieces and that these pieces have an expressive quality in their own right which can easily be exploited. (To get such an assembly absolutely flat and aligned has always been rather difficult, particularly if the light sources are very near the ceiling when they turn the slightest imperfection into a noticeable shadow.) The additive nature of the suspended ceiling has now been adequately demonstrated by such examples as Breuer's Bijenkorf, 11, Juhl's Trusteeship Council Chamber or Valle's Bank at Udine, 6. The forms which a ceiling designed on such assumptions can take have hardly been exploited yet. Louis Kahn's concrete tetrahedra at the Yale Art Gallery, 26, though not in any way a suspended ceiling, show a possible line of development. The prefabricated suspended

ceiling—as distinct from the suspended ceiling of plaster or sprayed asbestos—is, like the curtain wall, essentially additive architecture.

There are many approaches to the possibilities and problems of this kind of additive design. The most obvious assembly consists of taking acoustic panels, lights and their supporting grid and letting each stand separately. Breuer's ceiling in Rotterdam or Farmer and Dark's ceiling at Marchwood, belong to this category. At the other end of the scale there is Studio Valle's brilliant device of combining an opal acrylic honeycomb into a ceiling plane and then adding this entire plane to the underside of a complex truss so that structure and ceiling combine to form a shimmering surface overhead. This shimmering effect, as of light coming through moving leaves on a spring day, achieving the apparent paradox of restful excitement, is also the intention of the dapple ceilings with which Edward Stone has recently been experimenting. The courtyard of the U.S. Embassy at Delhi will be covered by necklaces of aluminium discs diffusing the light onto the water garden below. Dapple ceilings do not, however, depend on Indian sunlight. Stone has hung a similar ceiling over an auditorium at the Fine Arts Center of the University of Arkansas and hidden electric lights and ducts behind it, 28.

Together with the appreciation of the additive quality of many factory made ceilings has come the awareness that the suspended ceiling can, whatever its construction, be a form-giving component within the organization of a space. This second discovery may, in the end, prove more important than the first. Phillip Johnson's attenuated and Soanesque vaults in the brick guest house which faces his glass enclosure at New Canaan, Connecticut, 23, were perhaps the first to make this point. Johnson has now used a similarly taut ceiling in his synagogue at Port Chester, N.Y., where its obviously suspended canopy-like nature becomes even clearer. Both these ceilings are, despite their acknowledged superimposed character, controlling elements within each space. The same may be said of the ceilings in the chapels at Brandeis, 29, the Knoll Showrooms in Milan, 20, and Kiesler's World House Gallery in New York, 21, where suspended ceiling and suspended wall merge into a continuous flow.

These faceted or curvilinear forms are evidently part of a new sculptural awareness of space which we are currently experiencing. A new visual feeling often precedes the technical innovation which will in fact make it possible, and it may be, that these moulded ceilings are the fumbling prototypes of forms which will become commonplace in what might perhaps best be termed the 'resin' age.



29, Protestant chapel at Brandeis University by Harrison and Abramowitz.

1. the bell tower,
from the churchyard.

CHURCH IN STOCKHOLM

ARCHITECT | ÖRJAN LÜNING



2

CHURCH IN STOCKHOLM

This church, about six miles west of the centre of Stockholm, stands on a triangular site with an hotel and bank, and is financed by the rents of the business premises. The buildings are grouped round a churchyard, but only the church and its offshoots have access to it or windows overlooking it. The church seats a congregation of 250 and a choir of 30, and can be extended to include the adjoining parish hall, which accommodates a further 120. The sanctuary, which is dominated by a sgraffito figure of the Good Shepherd, has been designed for the special ceremonies and processions connected with baptism. The candidates enter the church up a flight of stairs from the basement, where they have changed into the white robes worn during the ceremony and attended a preparatory service in a small

circular chapel. The baptismal tank in the centre of the sanctuary is fenced in with large white candles and at the left-hand end is a wooden screen, behind which the candidates leave the church. The exterior is finished in a marble-grained plaster. Internally the walls and roof are plastered, the floor is polished red brick, doors and panelling are of Oregon pine. The benches are of solid Swedish oak with foamed plastic seats. There is no paint in the church, but colour is provided by the red and blue glass of the large triangular window in the sanctuary, which lights the sgraffito mural. The high windows at the back of the church have scattered triangles of yellow glass to give a warmer light during the long winter. The free-standing bell tower is of prestressed concrete beams with an aluminium cross.



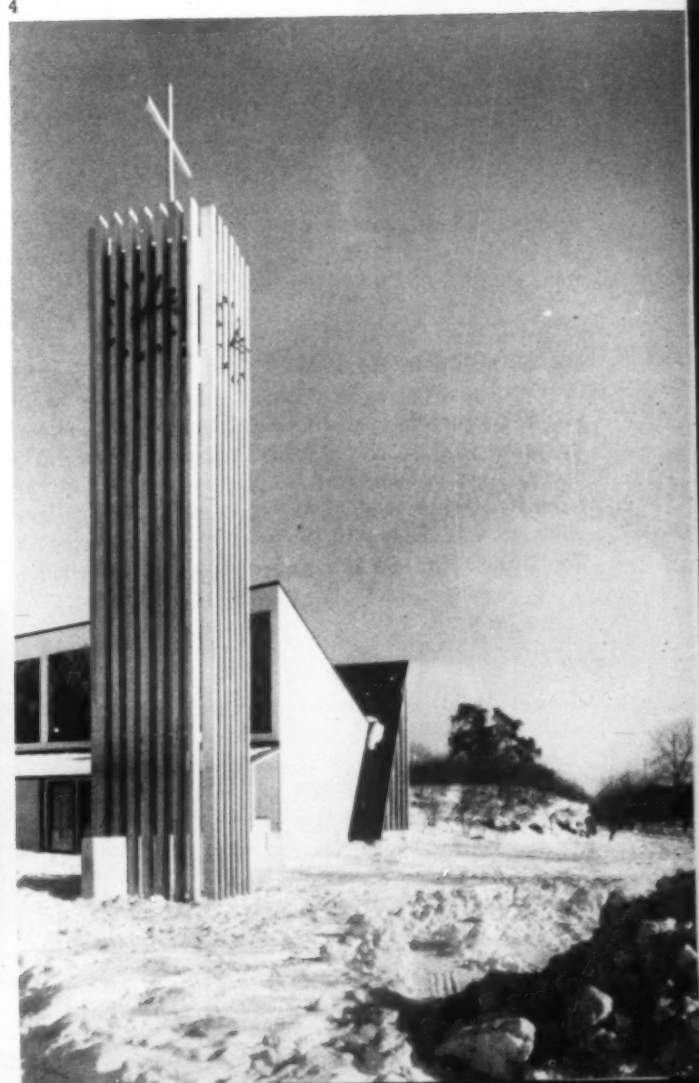
2. general view from the south, with shops on the left and the lighted window of the church on the right. In the background, behind the bell tower, is the hotel block.
3. the entrance to the hotel and shops.
4. the bell tower from the west.

2



- key
1. church.
 2. sanctuary.
 3. baptismal tank.
 4. stairway up for those who are going to be baptised.
 5. stairway down for those who have been baptised.
 6. choir.
 7. minister's entrance.
 8. minister's office.
 9. main entrance.
 10. cloakroom.
 11. parish hall.
 12. stage.
 13. Sunday school and cafeteria.
 14. storage.
 15. pantry.
 16. entrance to youth club and parish hall.
 17. cloakroom.
 18. arcade.
 19. church yard.
 20. bell tower.
 21. service entrance.
 22. entrance to underground garage.
 23. bakery.
 24. hotel kitchen.
 25. restaurant.
 26. confectioners.
 27. shop.
 28. storage for shop.
 29. hotel lobby.
 30. hotel office.
 31. stairway and lift to hotel.
 32. shop.
 33. bank.

4



3



CHURCH IN STOCKHOLM

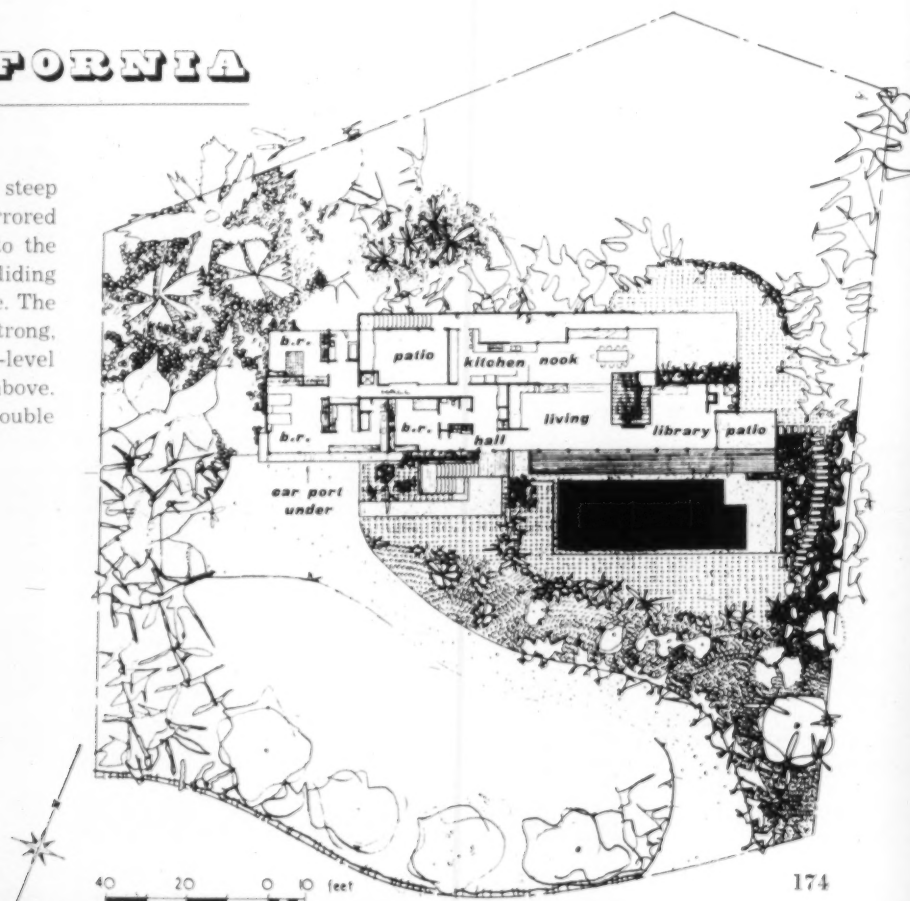


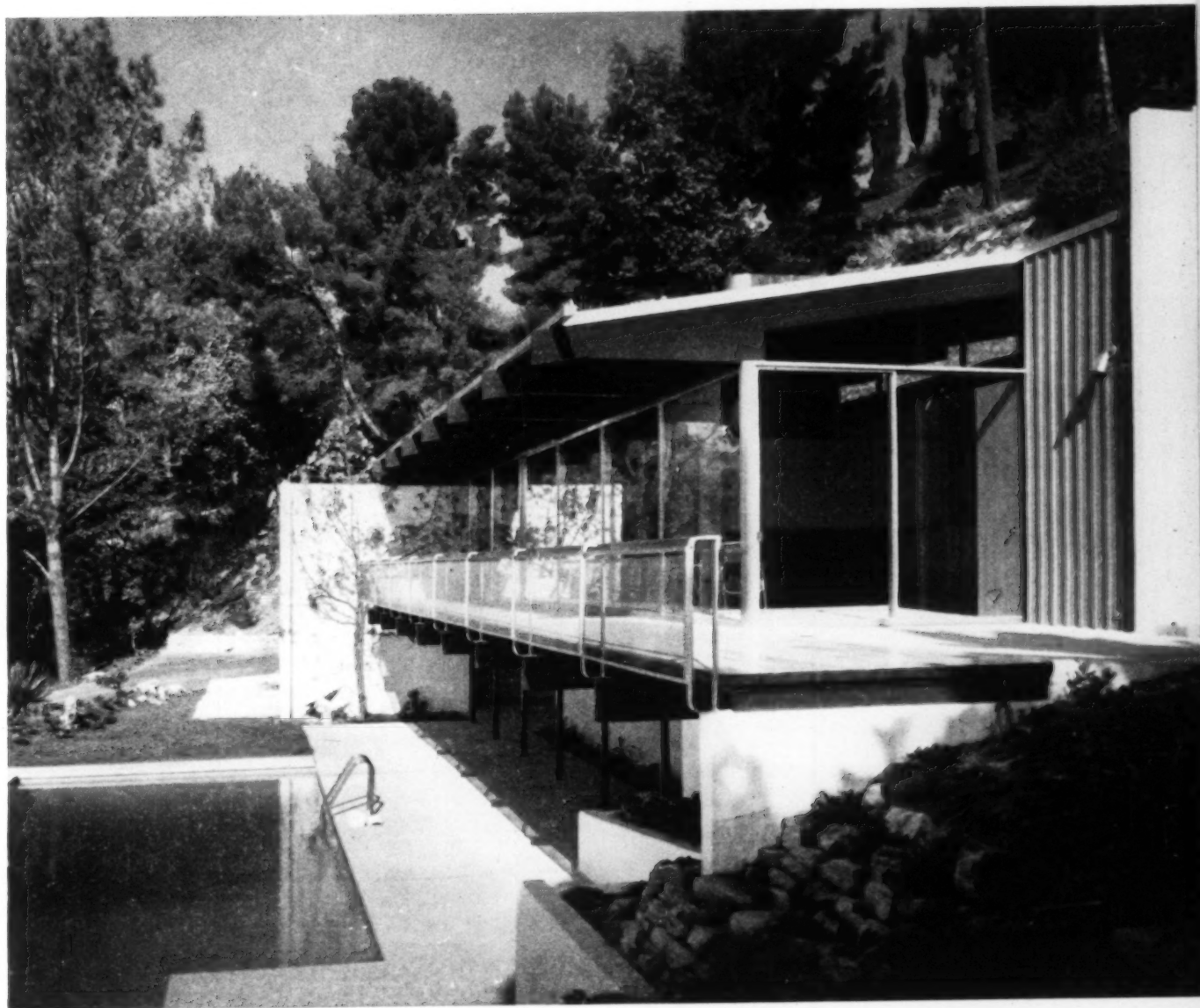
5, the churchyard, showing the long stained-glass window which was designed by the architect.
6, the interior, with the sgraffito figure of the Good Shepherd dominating the sanctuary.

HOUSE IN CALIFORNIA

ARCHITECT | RICHARD NEUTRA

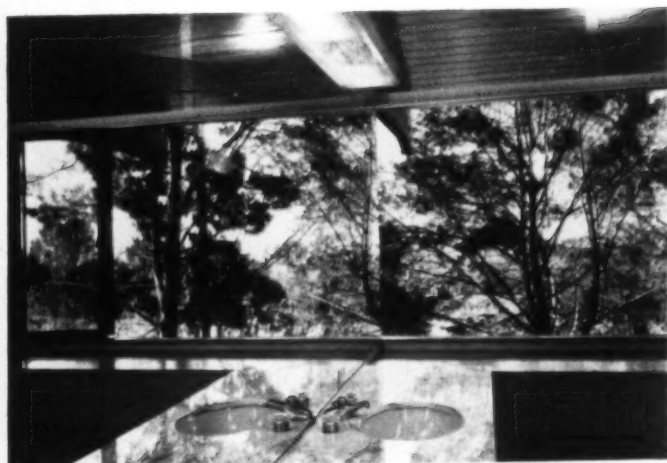
This house, at Bel-Air, California, stands on a steep hillside with a background of tall trees; it is mirrored in a pool and overlooks a wide landscape down to the sea. The structure is clad in stainless steel, with sliding transome windows and a Texas shellstone fireplace. The sloping roof is projected to the south over strong, laminated beams and allows for a strip of high-level windows with a view of the steep mountainside above. The living-room and library are separated by a double





1

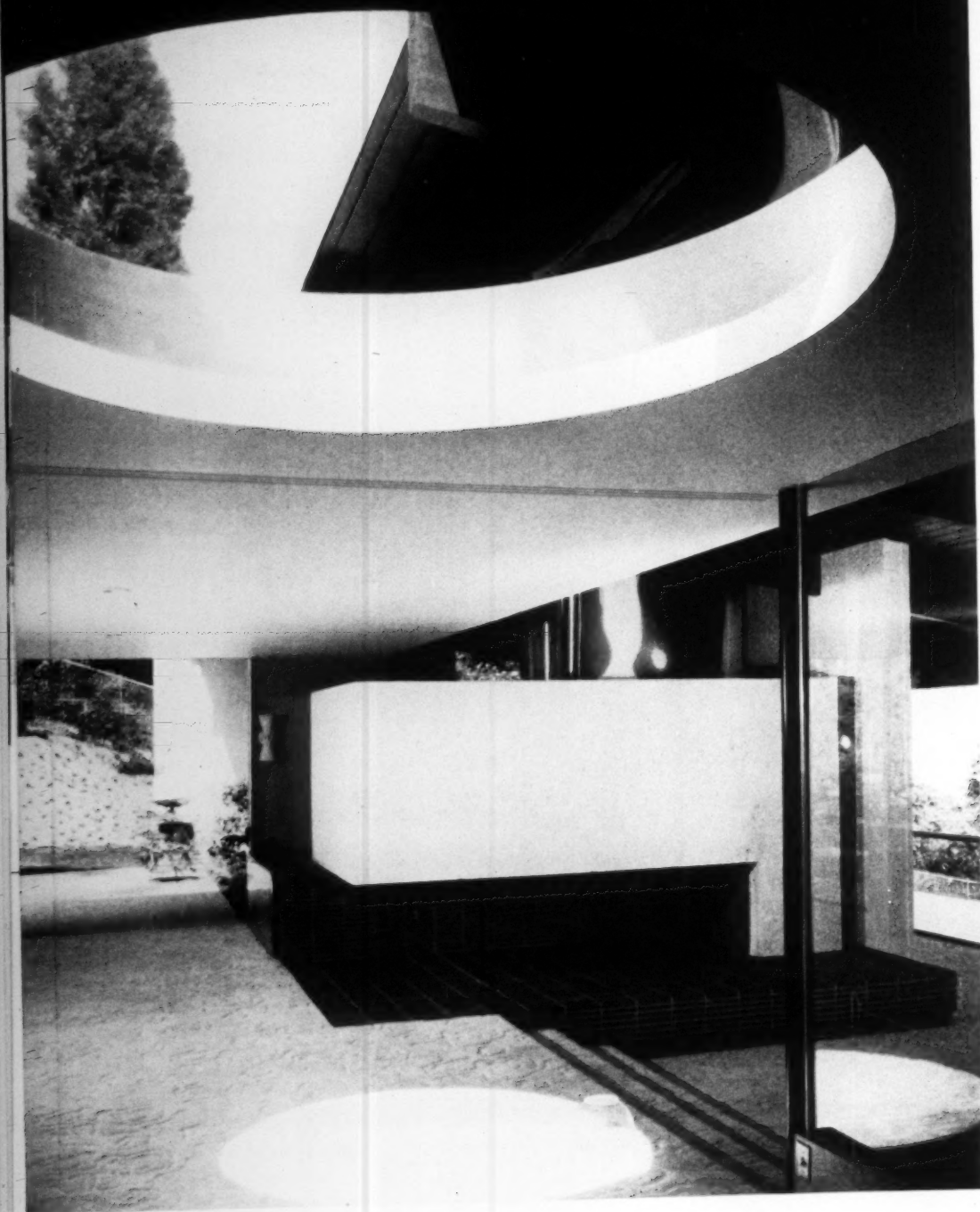
1. looking west along the terrace, with the pool below.
2. the basins in the bathroom are set in a marble slab backed by a wall of mirror.



2

HOUSE IN CALIFORNIA

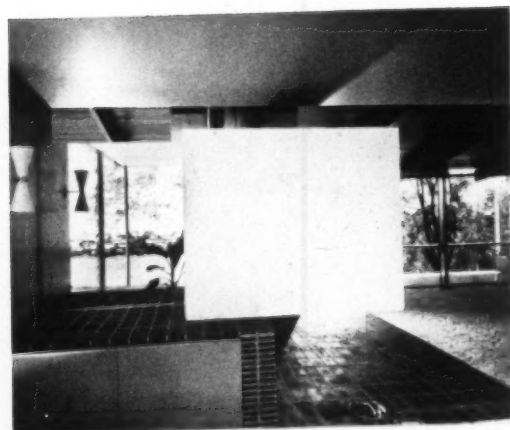
fireplace and have sliding doors and windows opening on to the balcony terrace over the pool. The dining area and kitchen are at a slightly higher level, overlooking the hillside. The bedrooms are at the western end of the house, with two servants' rooms on the lower level, adjoining the pool porch, which also gives access to the changing-rooms and storage space.



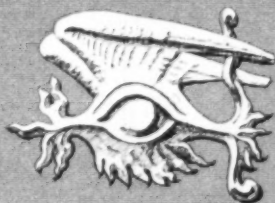
3

HOUSE IN CALIFORNIA

3, view from the breakfast room, showing the fireplace which is a dominant feature of the plan. The large transparent bubble in the roof gives a view of the treetops.
4, another view of the fireplace, looking towards the terrace and showing one end of the Texas Shellstone slab.



4



the exploring eye

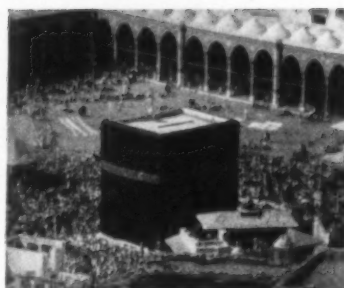
We forget that Euclid was an Egyptian. We tend to think of a single Greek geometry that embraces everything from Paestum to Ptolemy's world map, as static as a statue, without evolution. But Euclid was not born till a century after the Periclean culture that produced Plato and the Parthenon had run aground in a dead end summed up by Professor Ritchie's tart 'intellectual clarity was hardly enough.'

Born in Alexandria, Euclid was a member of that Hellenistic culture we are pleased to regard as decadent because not Athenian, and yet it stood right in the line of intellectual progress from the ancient world to the modern. Yet the Roman world found as little use for Euclid's 'Elements' as it did for the amusing toys (such as the steam turbine and the hydraulic engine) of his fellow Alexandrian, Hero.

Euclid's ideas went East, to fertilize the nascent culture of Islam, to meet 'arabic' numerals coming up from India, to fall into the hands of mathematicians as subtle as al-Khwarizmi. Finally, the 'Elements' found their way west again through the great chain of mediaeval Muslim universities, and by the Renaissance had improbably taken up position alongside Vitruvius, as the inspiration of a revived ancient culture that neither Greece nor Rome ever knew.

But the classical architecture that we like to think of as Euclidian derives in historical fact from an earlier and cruder concept of geometry, innocent of Euclid until Renaissance humanists got to work on it. The true architecture of Euclid was created to the east of his native Alexandria, and later carried as far as Spain by a culture that was far from Periclean. We, with our Parthenon-style prejudices have been happy to agree with Choisy's snap judgment that the appearance of Muslim architecture is 'capricious.'

We have been less vigorous in pursuing the implications of his second opinion that only a simple law could explain its complexity. Yet such an explanation was produced almost a century ago by Owen Jones, who showed that the 'fantasy' vaults of squinches and pendentives such as appear inside this fold-out, were based, in plan, on a system of simple Euclidian elements—squares, regular triangles—each corbelled out at its base from the one behind. The obviously impossible half-arches that appear to support the edges of the panels do so no more than do the more obviously rational ribs of Gothic vaults; it is an entirely corbelled system, with the bricks laid in flat courses, the arches are pasted on with mortar.



1. The Black Stone of the Kaa'ba in Mecca, hung in the embroidered cloth which is renewed every year for the pilgrimage. It is—by common repute—a square stone, but no square stone in Europe could ever be this shape; even if it were not a perfect cube it would almost certainly have acquired a cornice and a less ambiguous pedestal. The concept 'a square stone' transmits a different visual image in the lands to the east of Euclid's birthplace in Alexandria.

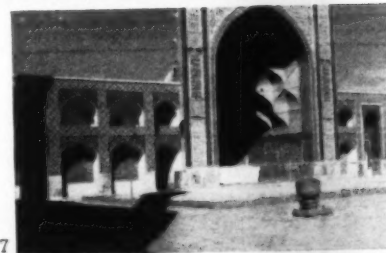
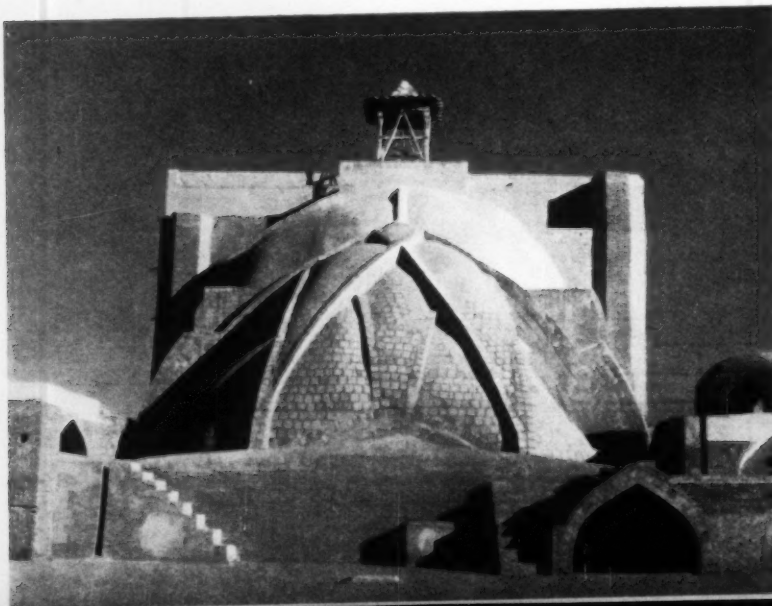
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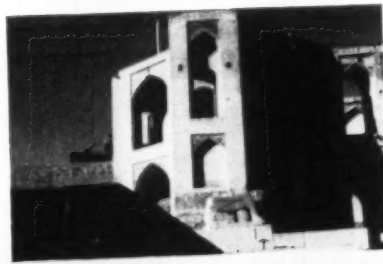
2, the contrast of Eastern and Western geometry at its most forceful, the portal vault of the eighteenth-century Madrasseh Madar-i-Shah, Isfahan. These stalactite or pendentive vaults are found throughout Islam, but reach a particular frenzy and a particular sobriety in the great niches of Isfahan. Even Perpendicular Gothic, Western rationalism on the verge of madness, never achieves the sense-defying

quality of these half-domes that seem, to Western eyes, to cry out for another half to complete and buttress them before they collapse. 3 and 4, the secret of these improbable vaults is that they are not vaults, are not formed of voussoir-shaped stones. They are formed of course upon course of corbelling bricks, organized in squinches apparently for the sake of simplicity in laying out the work (though 2 shows where

that simplicity could end) and guarded against toppling by the great 'proscenium arches' behind which they are built. These are details of the *aiwans* of the Masjid-i-Jami in Isfahan, built in the fourteenth century. 5 and 6, the extrados of these *aiwans* laid out plate-over-plate, like the carapace of crustacean, seem to belong to another architecture. Here, a Western eye might believe itself to behold a 7

5,6,9





ribbed vault of the sort he knows. In fact, it is simply the weather protection over the backs of the emblement of corbelled bricks within. It is no more a relation of European vaulting than is the octagon-over-square of an earlier vault of Seljuk period in the Masjid-i-Jami. Vaults of this kind have been compared to Turinese Baroque, but this one, with unsupported rib ends nodding dangerously over the

void, is completely at variance with the visual rationalism of European architecture.

7 and **8**, nevertheless European-style rationalism is to be found; flanking the north west *aiwan* the arcades maintain a post-and-lintel fiction resembling 'the horizontals and verticals of reason,' the fictional nature of these lintels (which are, in fact, carried by the arches below) being confirmed, for instance, by the

lintels on the bridge of Hassan Beg, where the bricks, set on end, are obviously unstructural.

9, finally, for pure pleasure, a pleasure vault that is all fiction: the interior of one of the 'porcelain rooms' in the palace of Ali Qapu, Isfahan, a wooden false-work of domelets and pendentives, into whose now empty niches were fixed curious vases ornamented with gold and precious stones.





the exploring eye

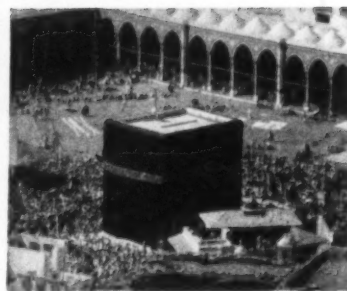
We forget that Euclid was an Egyptian. We tend to think of a single Greek geometry that embraces everything from Paestum to Ptolemy's world map, as static as a statue, without evolution. But Euclid was not born till a century after the Periclean culture that produced Plato and the Parthenon had run aground in a dead end summed up by Professor Ritchie's tart 'intellectual clarity was hardly enough.'

Born in Alexandria, Euclid was a member of that Hellenistic culture we are pleased to regard as decadent because not Athenian, and yet it stood right in the line of intellectual progress from the ancient world to the modern. Yet the Roman world found as little use for Euclid's 'Elements' as it did for the amusing toys (such as the steam turbine and the hydraulic engine) of his fellow Alexandrian, Hero.

Euclid's ideas went East, to fertilize the nascent culture of Islam, to meet 'arabic' numerals coming up from India, to fall into the hands of mathematicians as subtle as al-Khwarizmi. Finally, the 'Elements' found their way west again through the great chain of mediaeval Muslim universities, and by the Renaissance had improbably taken up position alongside Vitruvius, as the inspiration of a revived ancient culture that neither Greece nor Rome ever knew.

But the classical architecture that we like to think of as Euclidian derives in historical fact from an earlier and cruder concept of geometry, innocent of Euclid until Renaissance humanists got to work on it. The true architecture of Euclid was created to the east of his native Alexandria, and later carried as far as Spain by a culture that was far from Periclean. We, with our Parthenon-style prejudices have been happy to agree with Choisy's snap judgment that the appearance of Muslim architecture is 'capricious.'

We have been less vigorous in pursuing the implications of his second opinion that only a simple law could explain its complexity. Yet such an explanation was produced almost a century ago by Owen Jones, who showed that the 'fantasy' vaults of squinches and pendentives such as appear inside this fold-out, were based, in plan, on a system of simple Euclidian elements—squares, regular triangles—each corbelled out at its base from the one behind. The obviously impossible half-arches that appear to support the edges of the panels do so no more than do the more obviously rational ribs of Gothic vaults; it is an entirely corbelled system, with the bricks laid in flat courses, the arches are pasted on with mortar.



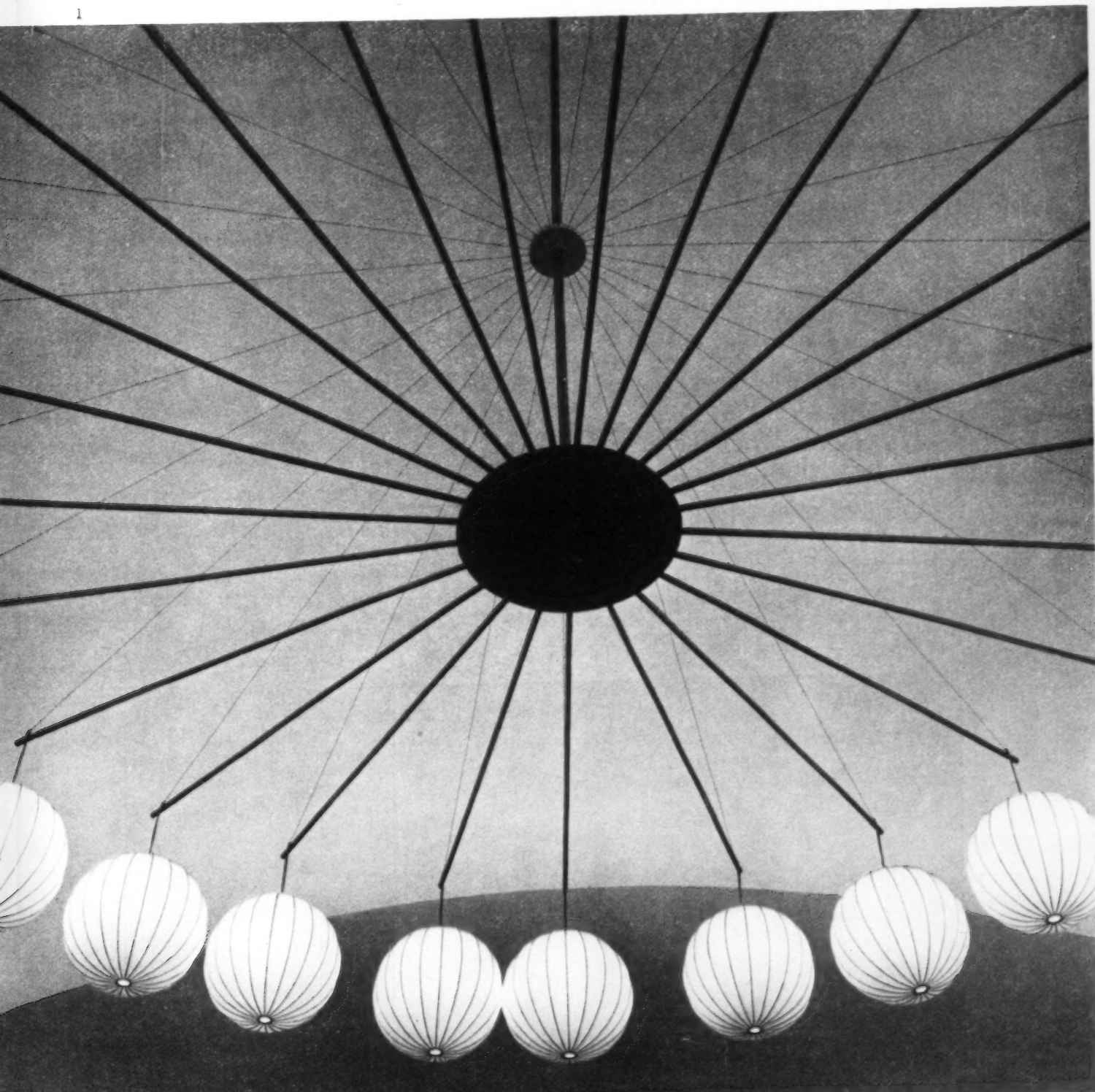
1. The Black Stone of the Kaaba in Mecca, hung in the embroidered cloth which is renewed every year for the pilgrimage. It is—by common repute—a square stone, but no square stone in Europe could ever be this shape; even if it were not a perfect cube it would almost certainly have acquired a cornice and a less ambiguous pedestal. The concept 'a square stone' transmits a different visual image in the lands to the east of Euclid's birthplace in Alexandria.

ID

a monthly review of interior design

Nottingham University. Co-ordinating interior designer:
Sir Hugh Casson. Associate designers: Ward and Austin,
Lady Casson, H. T. Cadbury-Brown, John Wright.

Ball pendant chandelier in
the ballroom (see page 183).





the exploring eye

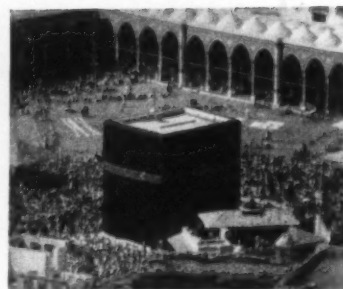
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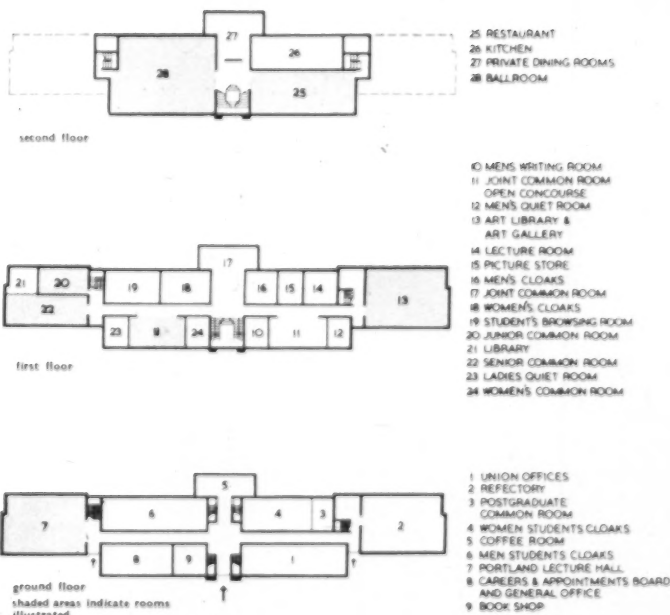
Nottingham University

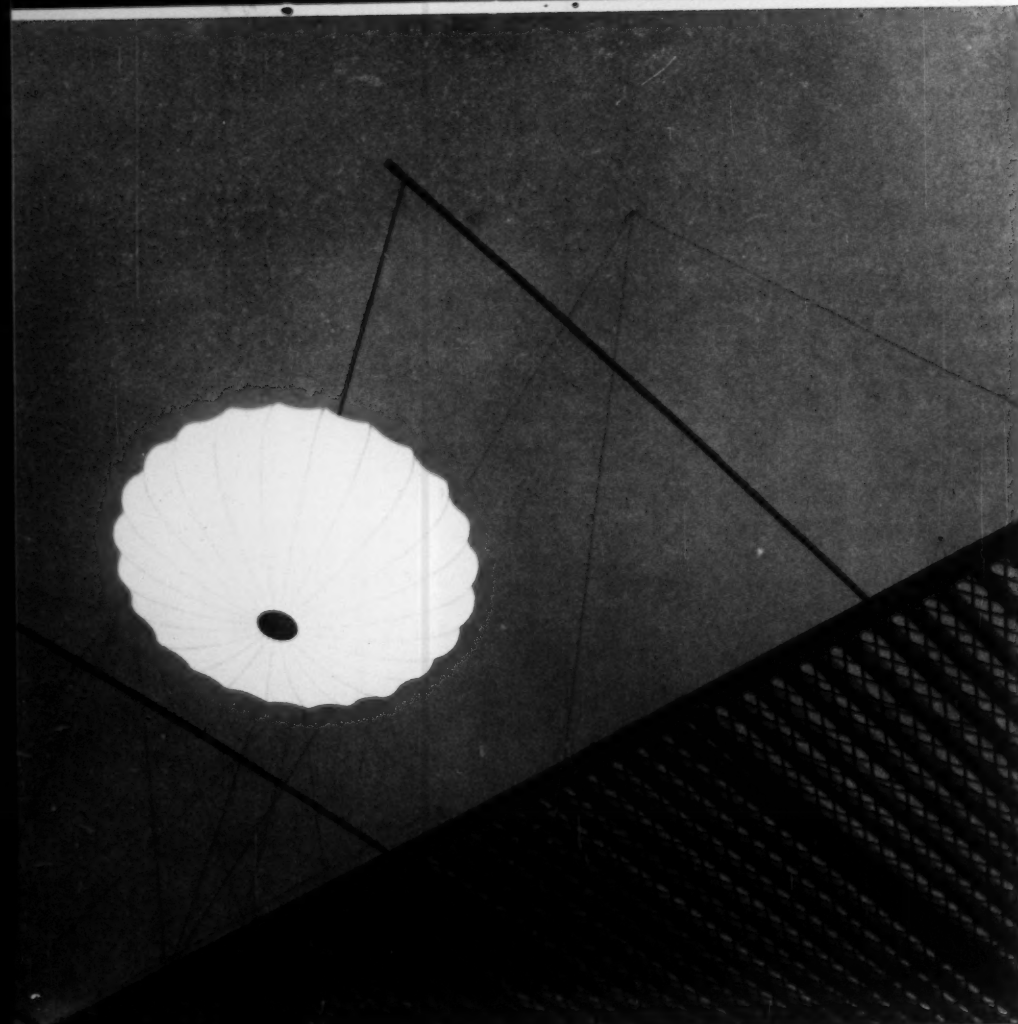
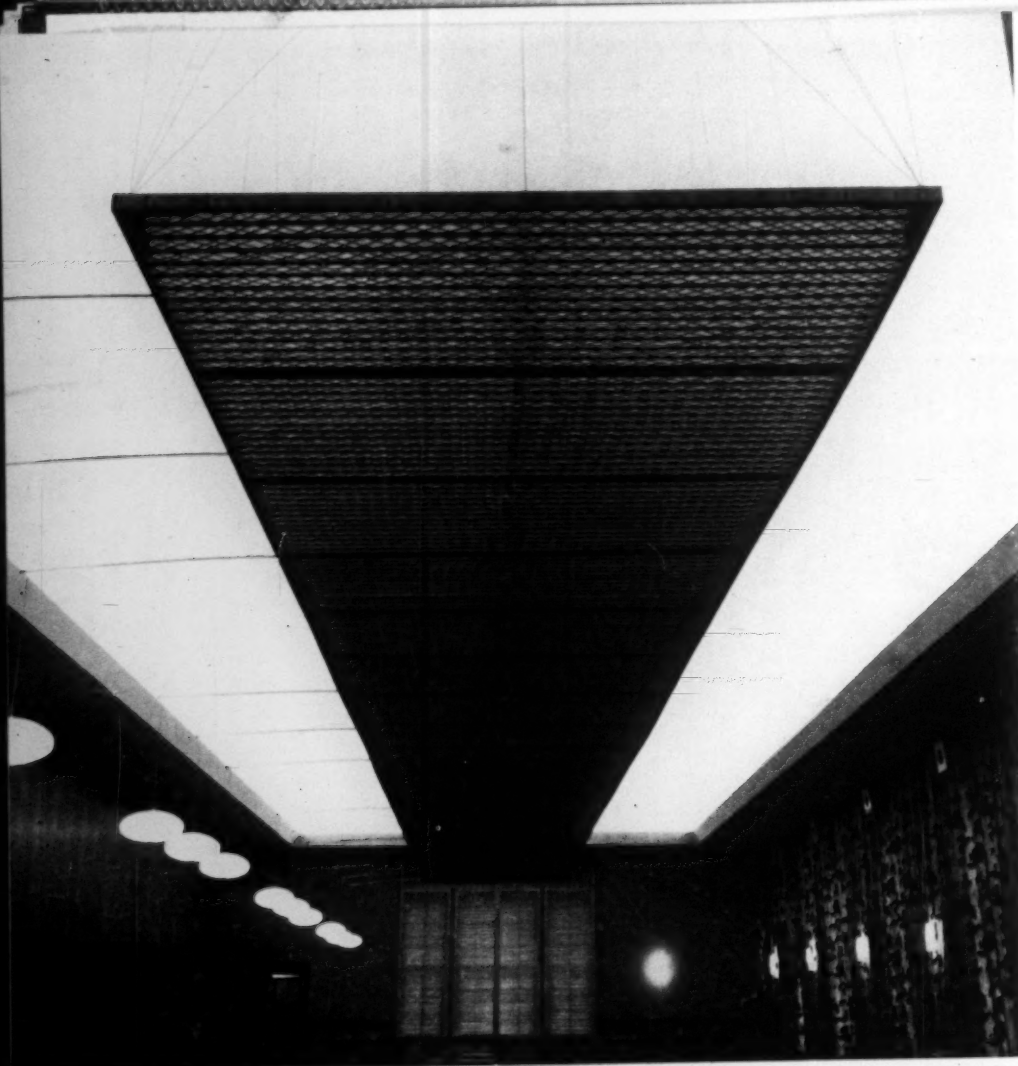
The new Portland Building for Nottingham University was designed by Cecil Howitt and Partners. It provides Union offices and recreational and welfare facilities for approximately 2,500 people including staff and students. It is primarily intended for the use of non-resident students.

The interior design of the major rooms was done by various architects with Sir Hugh Casson as Co-ordinating Interior Designer. These rooms include the Portland Lecture Hall and Students' 'browsing' library by Ward and Austin, a series of Common Rooms by Sir Hugh and Margaret Casson, the Department of Fine Art by H. T. Cadbury-Brown, and the Ballroom and Restaurant by John Wright.

2. view of the gallery in the art library designed by H. T. Cadbury-Brown which is reached by a black metal spiral staircase. The gallery handrail is of $\frac{1}{2}$ in. o.d. silver anodized aluminium tube. Dark brown hessian lines the walls and is carried up and over a white suspended acoustic ceiling. The Library shelving is black metal. On the right near the entrance is a spiral cluster of white pendant lights.

3. the library table which was specially designed by the architect





with opaque glass baffles. White plastic chairs by Aidron Duckworth have purple seat cushions. The floor is cork tile and is partially covered with a plain yellow carpet.

4, in the restaurant, designed by John Wright, the suspended ceiling of natural cane lattice on timber lit from above, from which ball pendants hang from rods over the alcoves. The whole of the window wall is covered by curtains of a white, red and green French fabric.

5, close up of one of the chrysaline ball pendants.

6, one of the alcoves in the restaurant; they are formed by leather covered banquette seating with cane filled screens above.

7, view of the restaurant from an ante-room linking it with the ballroom.

8, the ballroom designed by John Wright can be divided in two by plain light blue curtains. This view shows the main area with three 26-light chandeliers with ball pendants designed by the architect. Full length curtains of alternate panels of bright pink and yellow cover the windows and the areas of wall between them. The walls are dark blue, the upholstery is black and brown and black



carpet define the sitting areas around the perimeter of the room. The floor is maple strip.

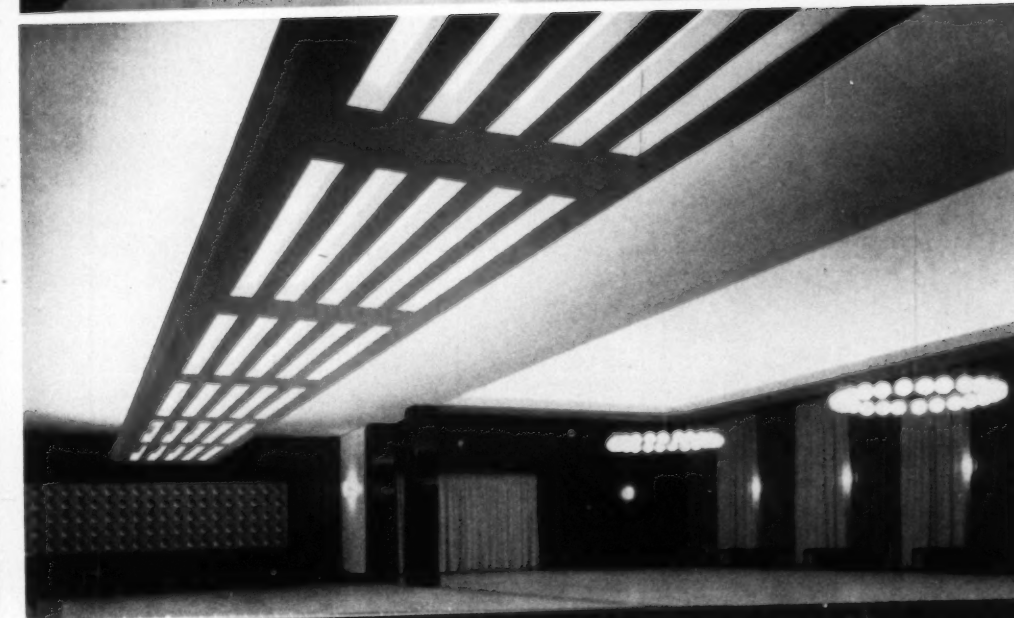
9, another section of the ballroom showing a suspended ceiling of white continuous metal boxes containing painted timber lit from above. The walls are donkey brown and at either



7



8



9

Nottingham University



10

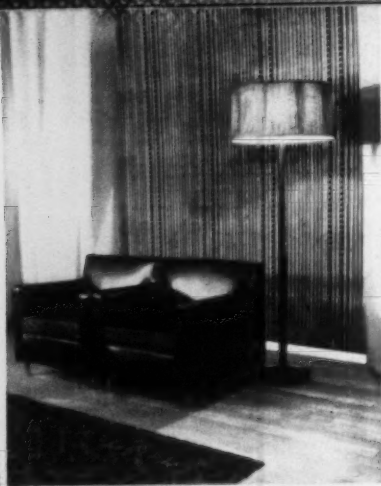
end there is a free-standing panel of wallpaper designed by John Aldridge in brown, blue and white.

10, the plastic 'egg-crate' louvre ceiling in the main art gallery, lit from above with additional roving spot-lights which can be fitted anywhere on the grid. To the right are fluorescent tubes suspended from the ceiling to throw light on to the walls.



11

11, the small art gallery, the walls are covered with natural hessian, and the floor is of 6 in. by 36 in. cork tile strips. The white plastic chair designed by Aidron Duckworth has purple seat cushions.



12



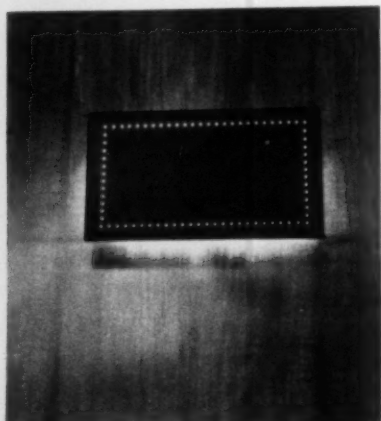
13

12, corner of the senior common room, designed by Hugh and Margaret Casson. The curtains are of yellow corded silk and the upholstery is in cinnamon and blue tweeds and black leather.

13, a corner of one of the joint junior common rooms. The black leather settee and imported cane chair are set off against a wallpaper in dark green, black and grey designed by Walter Hoyle.

14, In the Portland Lecture Hall designed by Ward and Austin, one of the wall lights; they are of perforated black metal and are used mainly to give low general light when the epidiascope is used.

15, a view of the lecture hall showing the general lighting effect.



14

15



16

Offices at Davies St. W.1

architect : J. M. Austin Smith and Partners
partner-in-charge : Geoffrey Salmon
assistant : Ian Morton-Wright

This is a reconstruction of an existing motor-car repair shop to provide a suite of offices including a reception room, a large general office for 27 clerks and secretaries, five directors' offices, and a small boardroom. A limited budget of approximately £8,000 was allowed.

16, general office seen from recep-

tion room (see also 20).
17, typist desk in the general office. All office furniture is designed by the architect and is built up from metal frames of 1½ in. by ¾ in. mild steel flats with lino covered chip-board tops and structured edging of pine wax polish.





17



18

18. telephonists' desk in the reception room.

19. ceiling in the board room. It consists of 'egg-crates' made up from $\frac{1}{4}$ in. thick chip-board which is self-supporting over the room. The fabric is brown, beige and grey madura.

20. the general office. The floor

consists of a special jointless screed over which is laid lino tiles. The walls are lined with plaster board scrimmed and lined with heavy lining paper and painted white, dark blue and yellow and the panels between the glazed screens in the partition are of sapele mahogany.

19

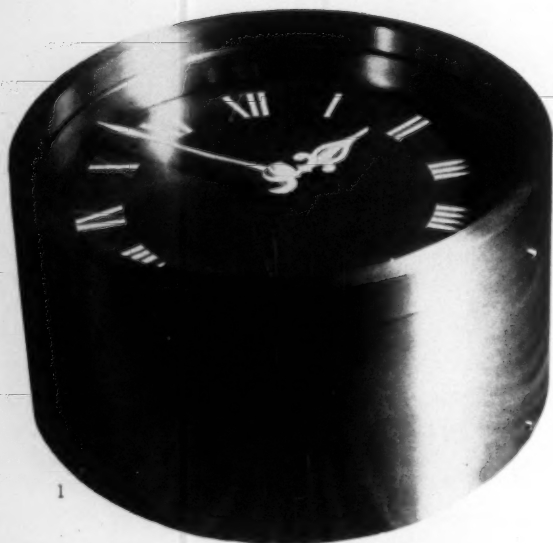


20



DR

design review



↑ wall clock: A straightforward design for a high quality wall clock is still a rarity. Until recently designers have frequently been forced to have special designs made at great expense or have had to resort to the shops' chandeliers. Only industrial clocks or the cheaper mass produced models which cannot afford the decorative disguises of compasses, astral charts or frying pans have achieved a readable simplicity.

The model illustrated, 1, has a marine flavour and is produced by Baume & Co. Ltd. and designed by Margaret Casson.

The face is dark olive green or white with Roman numerals and hands. The case is lacquered satin brass and it can be fitted with synchronous, impulse, 8-day, or battery wound movement. The prices range from approximately £18 for the synchronous to £25 10s. 0d. for the battery wound movement. The battery wound movement is a Swiss import, which accounts for the high

price. The spring of the clockwork mechanism is kept wound by a flat, torch-type battery which lasts approximately 9-12 months, and is simple to replace. A clock with this type of movement has the advantages of an electric clock but with added mobility and no electric leads.

The clock is 8 in. in diameter and projects 4 in. from the wall. Larger sizes can be supplied to special order.

The design combines elegance suitable for a domestic interior and the essential boldness and clarity for a pub or an office.

The British Horological Institute is planning an exhibition for next month at the Goldsmiths' Hall which is to include the current products of British watch and clock manufacturers together with examples of our old master clock-makers. It is hoped that some new designs will emerge by them of the standard of Big Ben's contemporaries of 100 years ago.

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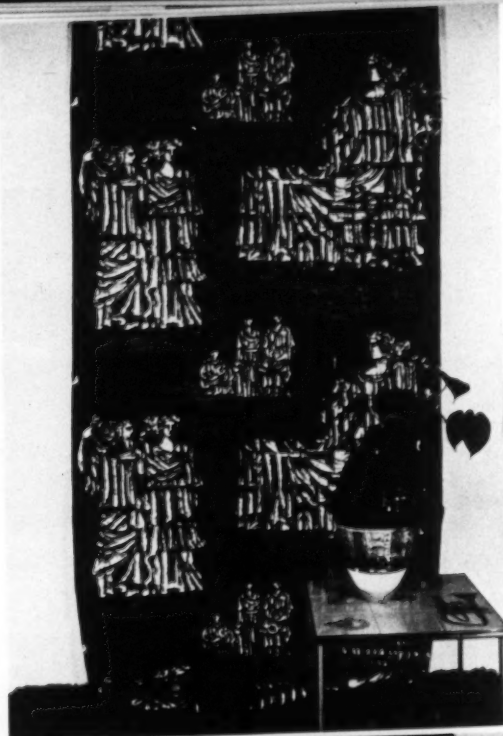
The exhibition includes furniture, fabrics, wallpapers, rugs and tiles, and some of the smaller elements of interior design.

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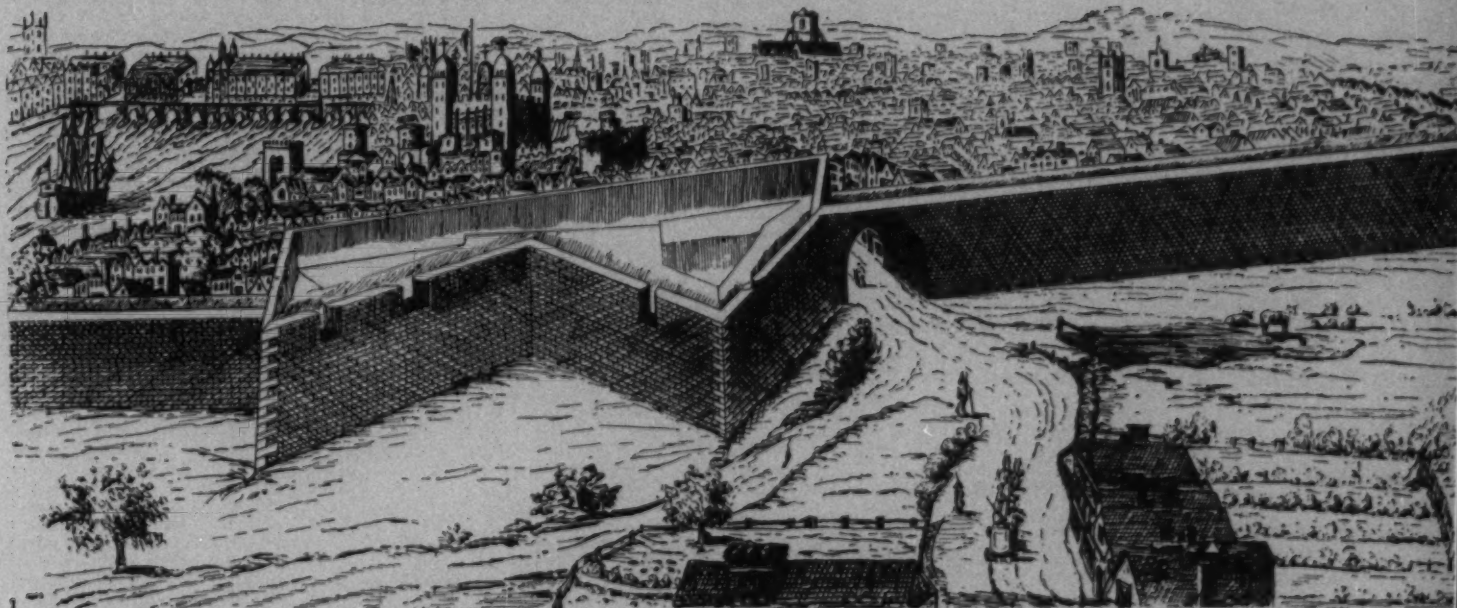
Amongst the fabrics are some beautifully drawn silk screened prints by John Drummond on classical themes. They are on 50 in. cotton satin and the prices range from 35s. to 50s. per yard. These are a refresh-

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THOMPSON FECIT



On March 24, 1852, a Mr. Gould exhibited to a meeting of the Archaeological Association a series of pen and ink drawings of the fortifications round London erected by the parliamentarians at the beginning of the Civil War. They were said to have been drawn by a Captain John Eyre of Bakewell, Derbyshire, and of Cromwell's regiment, and to be, together with a letter and some memoranda, the property of Mr. Peter Thompson of Oxford Street, who intended to publish them. The members of the association found the drawings 'exceedingly interesting' and Mr. Thompson received a number of orders for engravings of them at £2 12s. 6d. the set, one of which was for the Guildhall Library.

Among those who were most interested in this discovery was William Salt who was collecting material for his library. By a convenient coincidence Peter Thompson was able to produce a number of other drawings of seventeenth century London and of places in the midlands, a portrait of 'Master Salte of Yoxall,' and many notes on monumental inscriptions and heraldry relating to Staffordshire. These were acquired by Mr. Salt at the cost of several hundred pounds and they are still in the William Salt library. As Mr. S. A. H. Burne, a senior trustee of the library, remarked in a recent article on the drawings, 'the story that Eyre, while campaigning with the Parliamentary army, filled in his leisure moments by this archaeological activity, was not an unlikely one; Symonds and others have shown that it was the fashion of the day for soldiers to take pencil and notebook with them. But Eyre was almost too industrious.' Among his papers were two letters on military topics, one dated 'from ye towne of Walsall' on April 18, 1642, four months before the king raised his standard at Nottingham! The story goes that at a small literary party several of the guests began to twit Salt on his gullibility. He expressed his belief in the authenticity of the drawings and offered to submit them to the judgment of a panel of experts, who, alas, pronounced them

to be ingenious but obvious fakes. Salt's acceptance of them must have been largely due to wishful thinking for no one with any real knowledge of London during the Civil War could have accepted the 'fortification' drawings at their face value. The forts erected in 1642-3 consisted of trenches and earthworks hastily dug by the citizens of London to meet a sudden emergency. The description of them given by William Lithgow, a Scotsman who made a survey of them, in 1643, bears no resemblance to the elaborate erections with enormous brick and stone ramparts portrayed in the drawings. The fort at Wapping, 1, for example, was 'a seven angled fort erected of turfe and watles and earthenworke' with nine port-holes and as many cannon and 'neare the top, round about pallosaded with sharp wooden stakes fixt in the bulwarkes.' The plan of the forts is certainly based on that drawn by Vertue in 1738 and printed in Maitland's *History of London*, 1750, while the houses and streets in the drawings have for the most part been taken from Wenceslaus Hollar's 'Long View of London.' Thompson was a print- and book-seller and would therefore have had access to such material; he had some skill as a draughtsman and the evidence of style and writing leave no doubt that the fortifications and the other so-called seventeenth century drawings which he offered for sale were his own work.

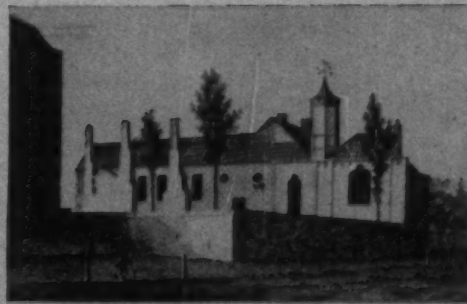
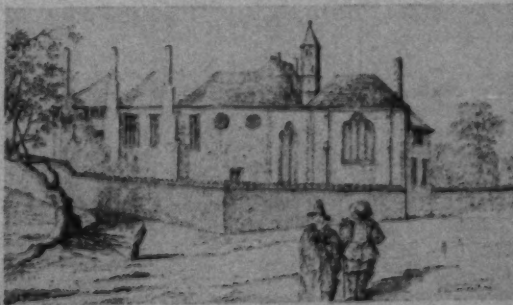
Thompson was emboldened by his initial successes and before his bolt was shot he produced a number of other drawings bearing the legend, 'W. Hollar fecit.' There are several of these in the collections at the Hackney and Bethnal Green reference libraries, 2 and 3, where they still sometimes give trouble to unwary searchers. The print room at the Victoria and Albert Museum contains an ink drawing on very yellow paper of a castellated building purporting to be the 'Greate house and mannor' at Kennington in 1643. A note on the mount casts doubt on its authenticity and it is almost certainly Thompson's work. The Guildhall Library also has a Thompson drawing. This is signed 'Sutton Nichols' and purports to be of St. Paul's Cathedral in 1685, 4; it shows the dome half completed and surrounded by scaffolding. A large volume containing 'Peter Thompson' drawings and engravings was acquired by the print room at the British Museum some years ago.

Thompson's most daring attempt in this genre was described in a letter addressed to *Notes and Queries* in June 1853 and signed P.T. He said 'I have very recently become possessed of some curious drawings by Hollar; those relating to Shakespeare very interesting, evidently done for one Captain John Eyre, who could himself handle the pencil well.' The drawings included interior and exterior views of the house 'in ye whiche Master Shakespeare lodged

in ye while he writed and played at ye Globe in Clink Street, Southwark.' They may possibly have been inspired by the Payne Collier forgeries in the manuscripts at Dulwich College. Thompson offered to engrave the drawings if 60 people undertook to subscribe a guinea a piece for a set but his offer came too late for his prospective clientele had already discovered that the drawings were faked and he had to return to more legitimate ways of getting a living.

Peter Thompson was born in Norfolk about 1800. The census return for 1851 gives his calling as 'colonial architect,' a designation which will be explained presently. From the same source we learn that he had a wife, Sarah, and three children, Peter, aged 20, Elizabeth, aged 16, and Charles Edward, aged 7, born respectively in Westminster, Norwich and Limehouse, and a servant girl. He first appears in a London directory in 1828 as 'carpenter and builder opposite Cleveland Street, New Road, Regents Park.' Two years later he is shown as a bookseller in Osnaburgh Place and this address remained his headquarters for the next thirty years, though he boasted a number of temporary or 'accommodation' addresses during that time.

Thompson seems from the first to have had ambitions beyond those of the ordinary working craftsman. In 1835 he submitted a set of designs, 5, for the new Houses of Parliament in



1, the fortifications at Wapping, purported to be by an officer in Cromwell's army; drawn by Thompson, the fort and streets are based on plans by Vertue and Hollar respectively. 2, Brooke House, Hackney, drawn by Thompson, with imitated signature of Hollar. 3, the original engraving by Chatelaine and Malcolm from which Thompson's drawing was adapted.

DR

design review



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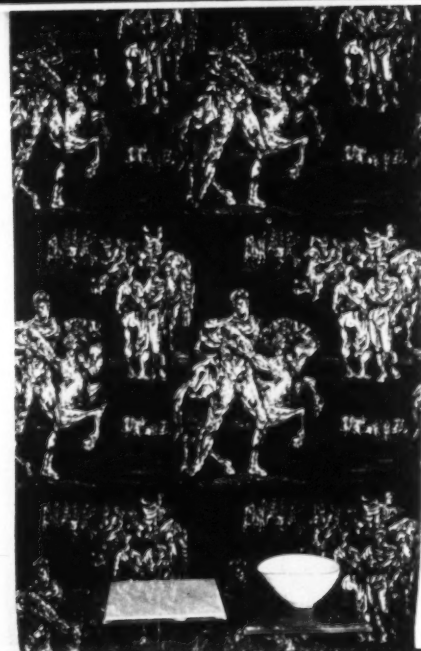
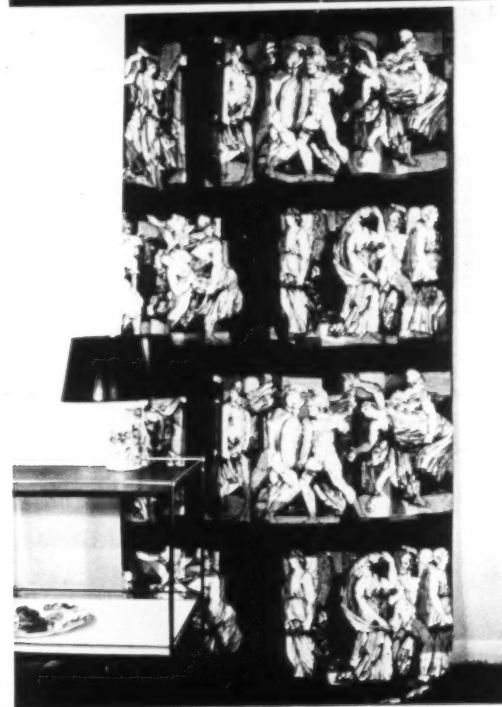
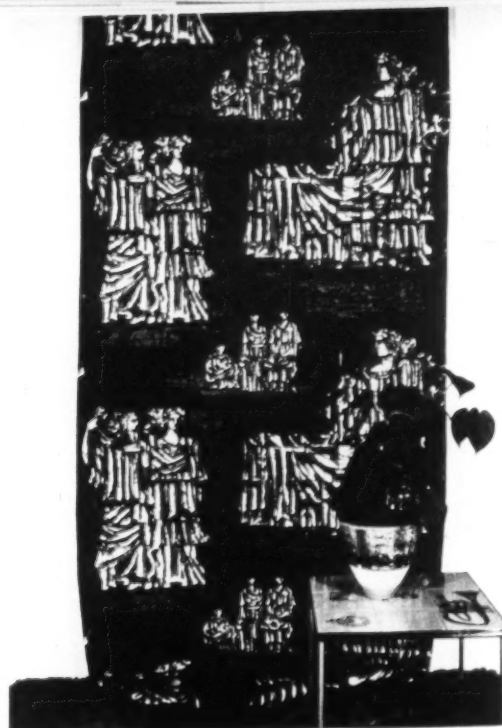
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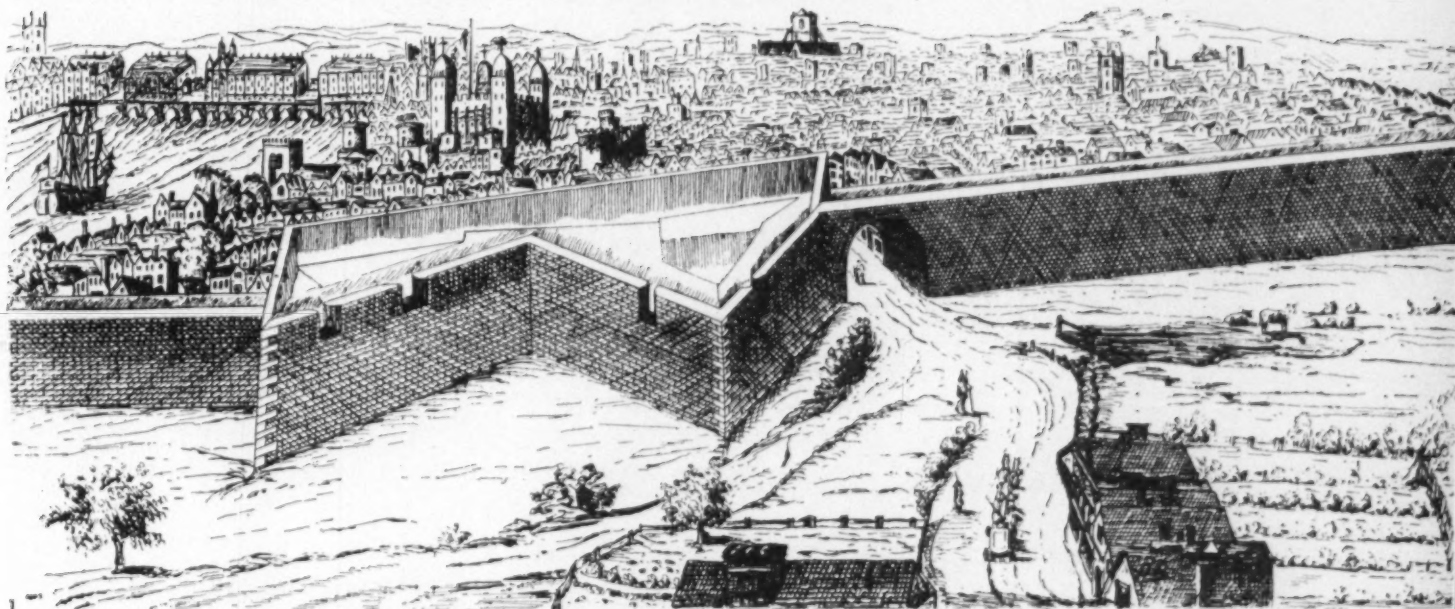


2

3

4

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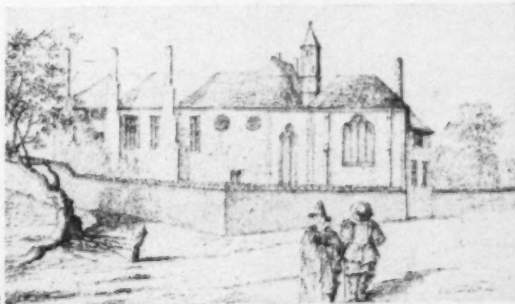
Thompson was emboldened by his initial successes and before his bolt was shot he produced a number of other drawings bearing the legend, 'W. Hollar fecit.' There are several of these in the collections at the Hackney and Bethnal Green reference libraries, 2 and 3, where they still sometimes give trouble to unwary searchers. The print room at the Victoria and Albert Museum contains an ink drawing on very yellow paper of a castellated building purporting to be the 'Greate house and mannor' at Kennington in 1643. A note on the mount casts doubt on its authenticity and it is almost certainly Thompson's work. The Guildhall Library also has a Thompson drawing. This is signed 'Sutton Nichols' and purports to be of St. Paul's Cathedral in 1685, 4; it shows the dome half completed and surrounded by scaffolding. A large volume containing 'Peter Thompson' drawings and engravings was acquired by the print room at the British Museum some years ago.

Thompson's most daring attempt in this genre was described in a letter addressed to *Notes and Queries* in June 1853 and signed P.T. He said 'I have very recently become possessed of some curious drawings by Hollar; those relating to Shakespeare very interesting, evidently done for one Captain John Eyre, who could himself handle the pencil well.' The drawings included interior and exterior views of the house 'in ye whiche Master Shakespeare lodged

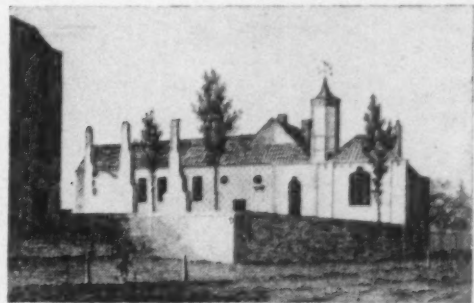
in ye while he writed and played at ye Globe in Clink Street, Southwark.' They may possibly have been inspired by the Payne Collier forgeries in the manuscripts at Dulwich College. Thompson offered to engrave the drawings if 60 people undertook to subscribe a guinea a piece for a set but his offer came too late for his prospective clientele had already discovered that the drawings were faked and he had to return to more legitimate ways of getting a living.

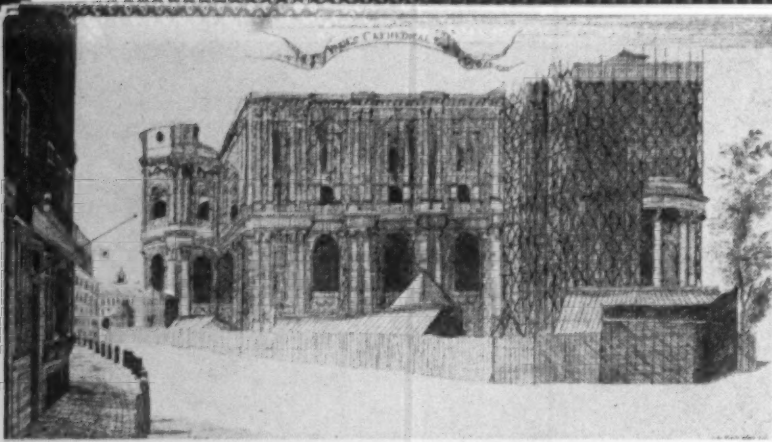
Peter Thompson was born in Norfolk about 1800. The census return for 1851 gives his calling as 'colonial architect,' a designation which will be explained presently. From the same source we learn that he had a wife, Sarah, and three children, Peter, aged 20, Elizabeth, aged 16, and Charles Edward, aged 7, born respectively in Westminster, Norwich and Limehouse, and a servant girl. He first appears in a London directory in 1828 as 'carpenter and builder opposite Cleveland Street, New Road, Regents Park.' Two years later he is shown as a bookseller in Osnaburgh Place and this address remained his headquarters for the next thirty years, though he boasted a number of temporary or 'accommodation' addresses during that time.

Thompson seems from the first to have had ambitions beyond those of the ordinary working craftsman. In 1835 he submitted a set of designs, 5, for the new Houses of Parliament in



1, the fortifications at Wapping, purported to be by an officer in Cromwell's army; drawn by Thompson, the fort and streets are based on plans by Vertue and Hollar respectively. 2, Brooke House, Hackney, drawn by Thompson, with imitated signature of Hollar. 3, the original engraving by Chatelaine and Malcolm from which Thompson's drawing was adapted.





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Commissioners of Works. Various modifications were suggested by Little and Thompson and on April 16 approval of the proposed building was given on condition that the piers were made at least 18 inches thick and that the walls between them were of brick and were bonded in every sixth course with iron hoops. Flushed with success Thompson applied in the June following to be allowed to build a temporary church 'in strict accordance with the one I am now building at John's Wood,' at Maida Vale, for use during the 18 months it was estimated that Thomas Cundy would take to erect the permanent church. In this case the registrar made the additional conditions that the roof was to be of slate and the lobbies paved with fire-proof material. Other temporary churches followed, in Camden Town (1846), Agar Town and South Lambeth (1847) and Palmer's Village, Westminster and Chalcat Road, St. Pancras (1848). With the church at Chalcat Road Thompson again found himself in trouble with the Metropolitan Buildings Office. The surveyor reported that the piers rested on the surface of the ground which was of wet clay; the wooden floor was raised above the ground on brick posts without caps and the bearing timbers were old and weakened by mortices and notches made in connection with their former services. Moreover the gap under the floor had not been boarded in and it was feared that ill disposed persons might get underneath and knock down the supports. Some further props were put in but the building was still reported to be insecure even 'in summer time.' In the end Thompson managed to

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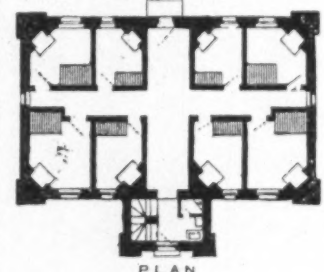
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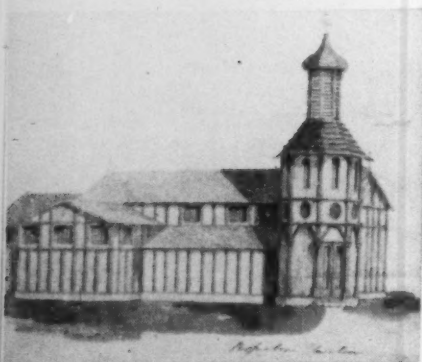
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PLAN

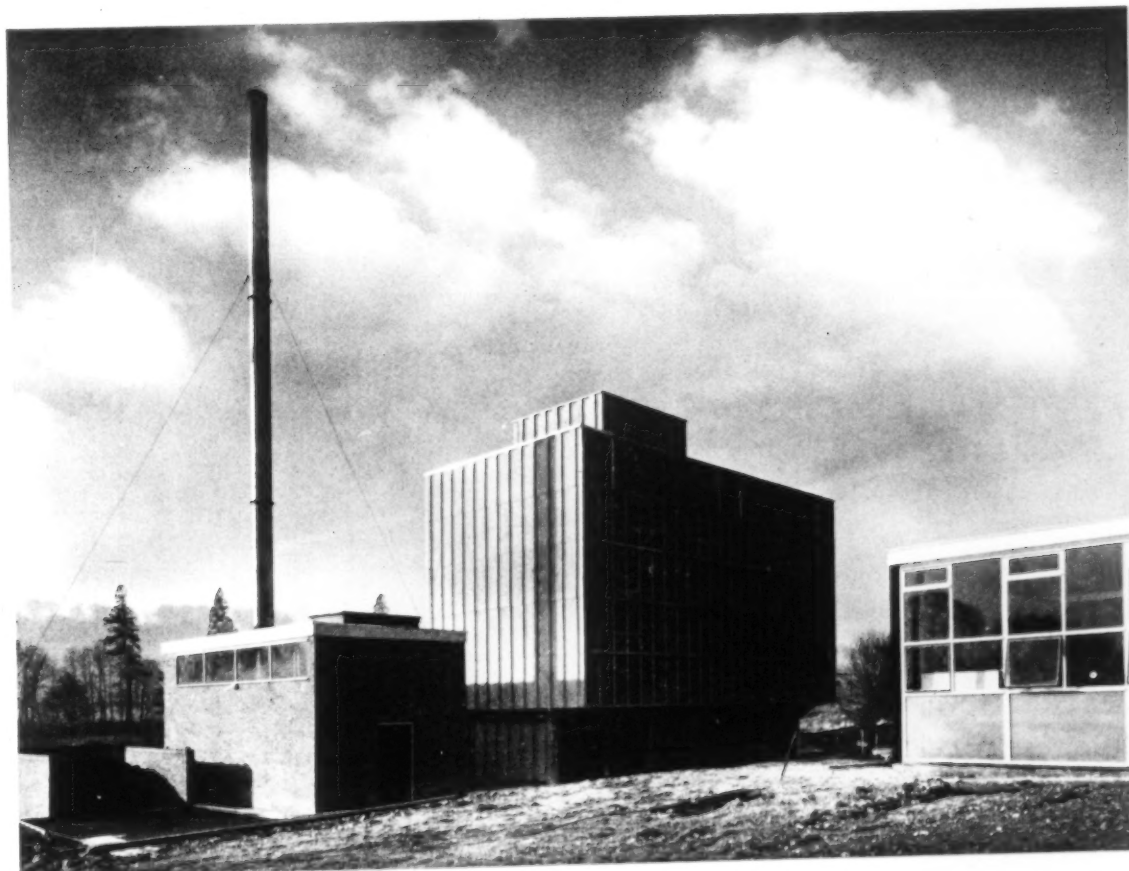
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6, Thompson's design for a prefabricated temporary church in Finchley Road.

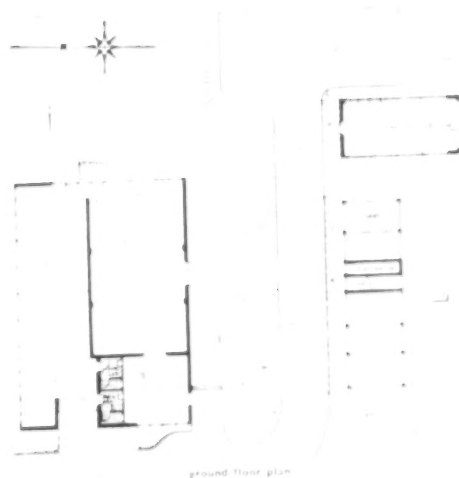
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1. general view of the factory from the north east.

FACTORY AT BERKHAMSTED

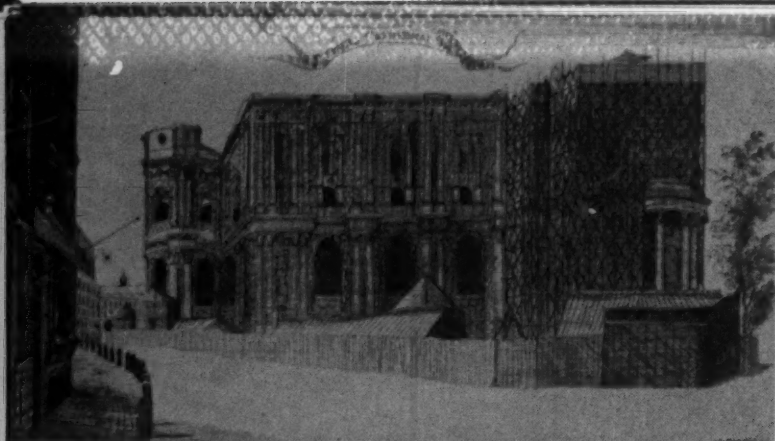
ARCHITECTS: ARCHITECTS CO-PARTNERSHIP



ground floor plan

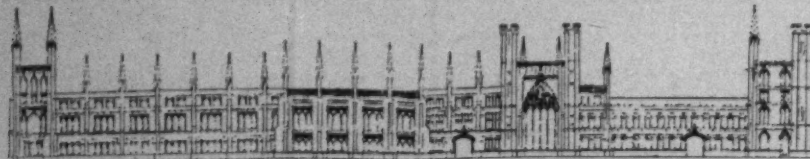
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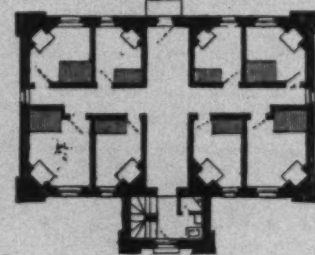
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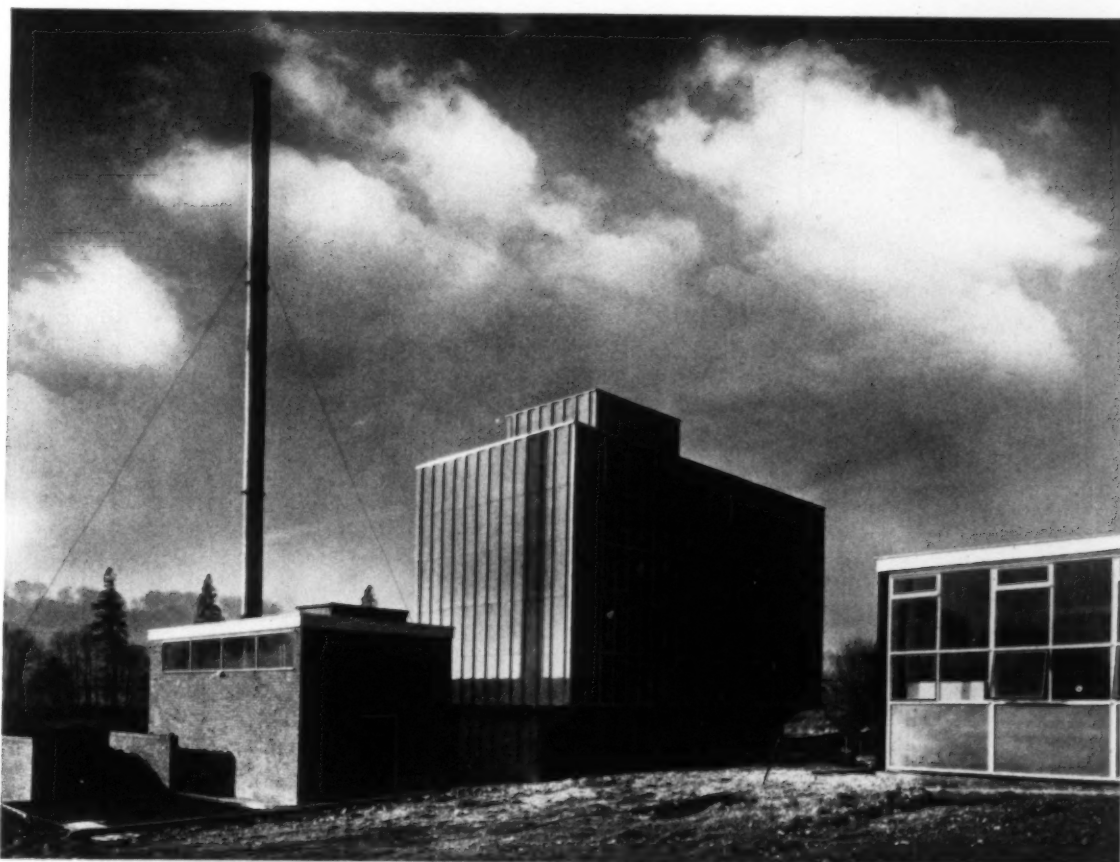
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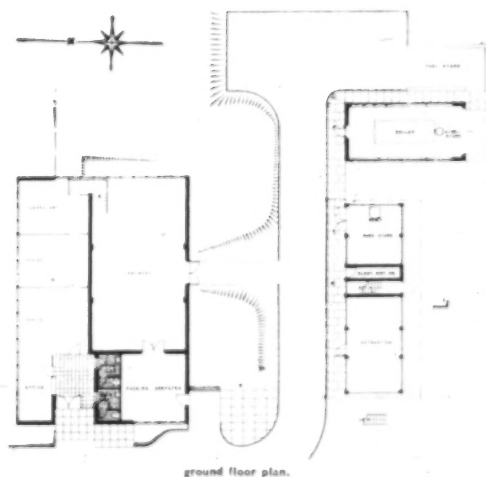
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1, general view of the factory from the north east.

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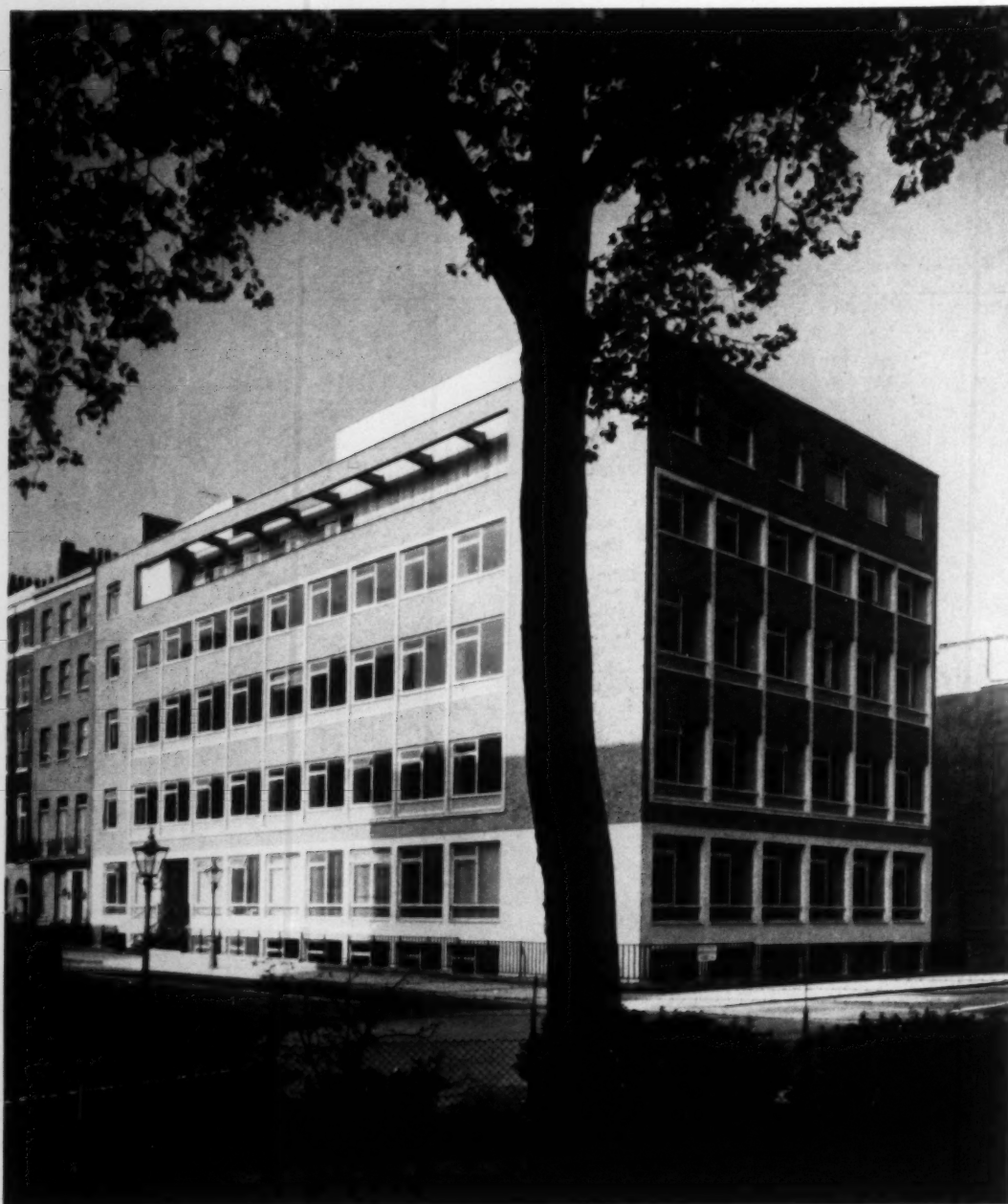
ARCHITECTS: ARCHITECTS CO-PARTNERSHIP



ground floor plan.

This factory, for the manufacture of fine chemicals by the solvent extraction process, stands on the Grand Union Canal to the west of Berkhamsted. The grinding and extraction processes involve a considerable fire risk and are housed in a separate building, with an adjoining boiler house. This building is on three floors, with a precast reinforced concrete frame and in situ reinforced floors. The cladding is aluminium patent glazing on the north side and troughed asbestos sheeting on the other three; the roof is hollow asbestos decking covered with bituminous felt.

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2, the south and east facades from Montagu Square.

THEOLOGICAL COLLEGE IN LONDON

ARCHITECTS: YORKE, ROSENBERG AND MARDALL

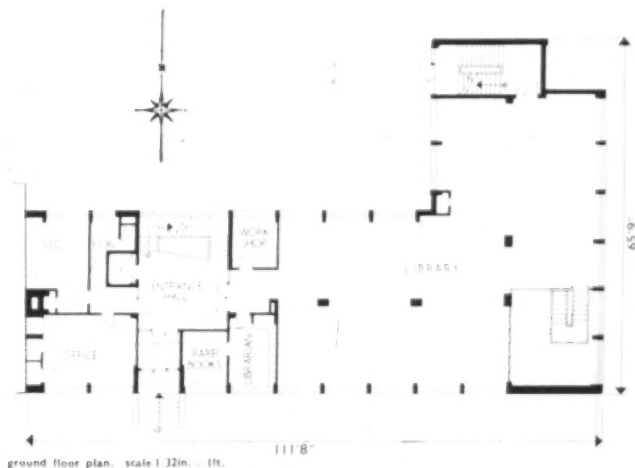
This theological college in Montagu Place, W.1, provides residential accommodation, teaching rooms, a library, offices and a squash court, on a very restricted site. The line and scale of the Georgian houses in the square has been preserved and the building follows the original building line, with a standard column spacing of 9 ft. The ground and basement are clad with Portland stone, with brick facing above, the windows on the first, second and third floors being linked with a stone surround. At fourth-floor level there is a long horizontal terrace with a brick 'beam' above, on cantilevered supports. The north elevation has exposed columns with large windows and brick apron panels. The library, offices, dining room and kitchens occupy the basement and ground floors; the first and second floors have classrooms and the synagogue, and the bed-sitting rooms and warden's

3, one of the students' bed-sitting rooms on the third floor.



Theological College in London

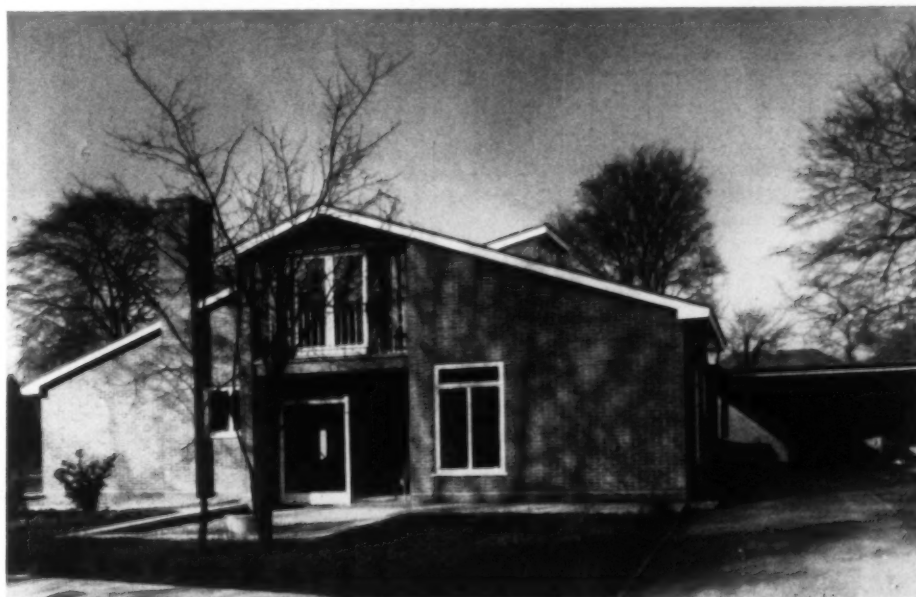
and caretaker's flats are on the third and fourth floors. The frame is of reinforced concrete with 11-in. cavity brick external walls. The window frames are galvanized steel set in timber sub-frames. The external doors are fully-glazed solid hardwood; the floors are hollow pot reinforced concrete finished with cork tiles, polyvinyl sheet or hardwood blocks. The principal staircase is finished in terrazzo. In the synagogue the Ark is faced with chestnut and Israeli olive wood veneers, with a suspended ceiling of ash veneered ply.



ground floor plan. scale 1/32 in. = 1 ft.



4, the north elevation, facing the mews, expresses the structure clearly, in contrast to the elevations facing the square, which have retained the existing Georgian scale.



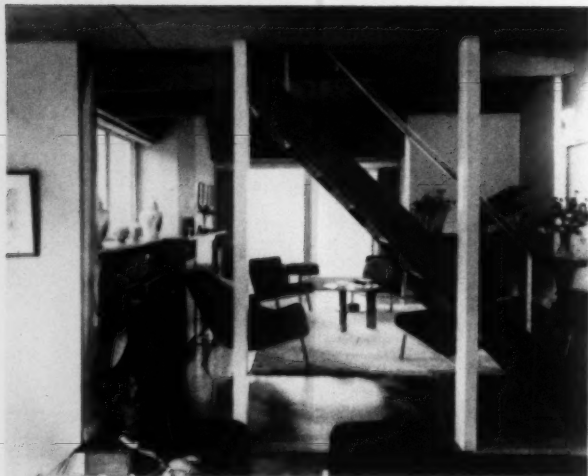
5, view from the south east, showing the large dining room window, with the studio balcony above.

HOUSE AT COVENTRY

ARCHITECT: DUNCAN KAYE

The house is in a corner of a quiet estate near the centre of Coventry, and surrounded by silver birches and wild plums which were already there. All accommodation is on the ground floor, except for a combined studio and spare room at first-floor level, which leads into a workshop, lit by a dormer window, in the roof space. The main bedroom and bathroom form a separate suite, and a shower

in the cloakroom enables it to be used as a second bathroom. The house has an oil-fired warm-air under-floor heating system. The floors are of mansonia wood blocks, the staircase and fittings of sapele and the ceilings gaboon plywood. The painted walls are grey, with cedar boarding above door level in the sitting room. The house is built of deep red bricks, with teak frames to the large windows.



6, looking from the dining room under the stairs to the sitting room.

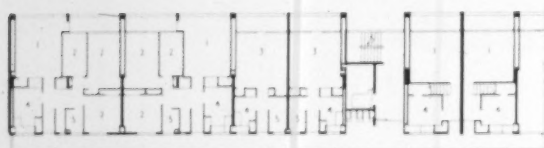
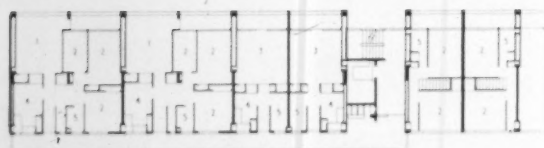
House at Coventry



ground floor plan

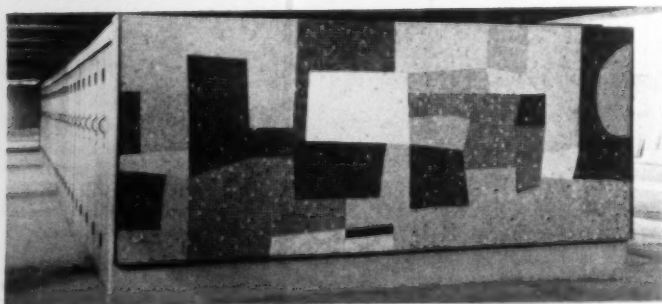
FLATS AT LAMBETH

ARCHITECT: L. G. CREED



first and second floor plans.

key.
1. living room.
2. bedroom.
3. bed-sitting-room.
4. kitchen.
5. bathroom.



8, abstract mosaic mural by Malcolm Hughes, opposite the lifts on the ground floor.



7, south elevation, showing recessed private balconies.

This building in Royal Street, Lambeth, provides accommodation for 280 people displaced by the rebuilding of St. Thomas's Hospital. The structure is r.c. on a mass concrete foundation, and the columns at ground floor level are set at 29 ft. 6 in. centres to give a feeling of lightness and provide views across the site. The balcony fronts, end walls and roof parapet are of precast bush-hammered granite concrete; all the window panels are of pre-fabricated softwood. The floors are finished with thermoplastic tiles. Heating is by convector stoves which also supply hot water in winter; there is an immersion heater for summer use. Contrasting colours have been used externally, blue on the soffits of the staircase and pink horizontally along the whole length of the block to emphasize the recessed balconies.

BOOKS

GLOAG'S GENERAL HISTORY

GUIDE TO WESTERN ARCHITECTURE. By John Gloag. Allen and Unwin. 63s.

This pleasantly written guide, sweeping comfortably through the centuries from the origins of Greek architecture to the origins of reinforced concrete, should be a smooth introduction for an enquiring teen-ager or enquiring grown-ups. Its ten chapters are strewn with drawings by Hilton Wright, and with reproductions of engravings; there are also plates, which for the most part avoid the hackneyed view.

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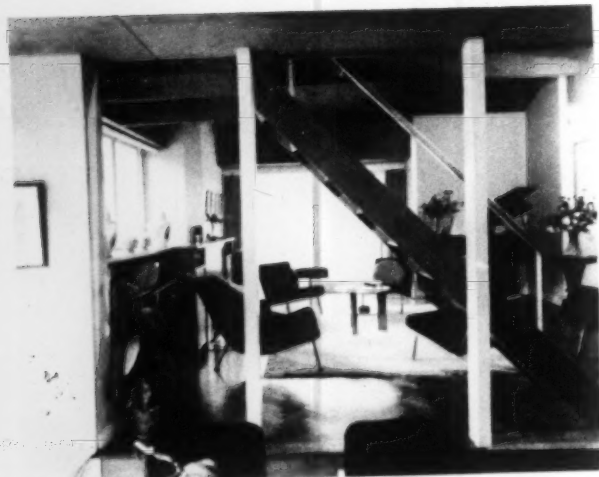
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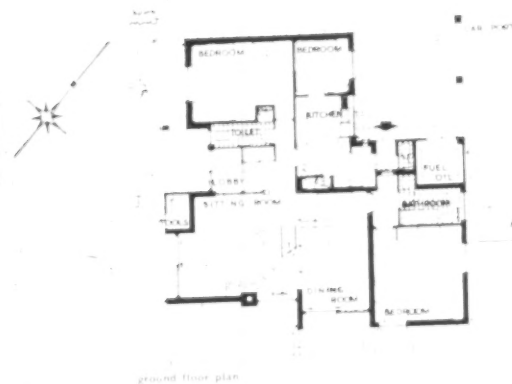
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House at Coventry



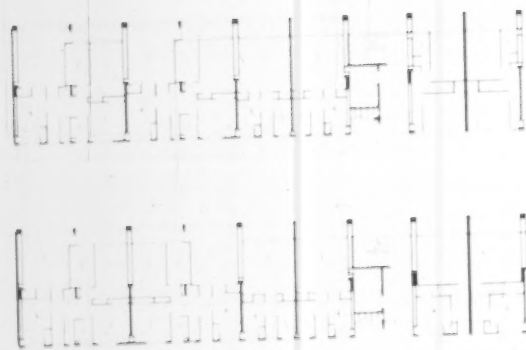
6, looking from the dining room under the stairs to the sitting room.



ground floor plan

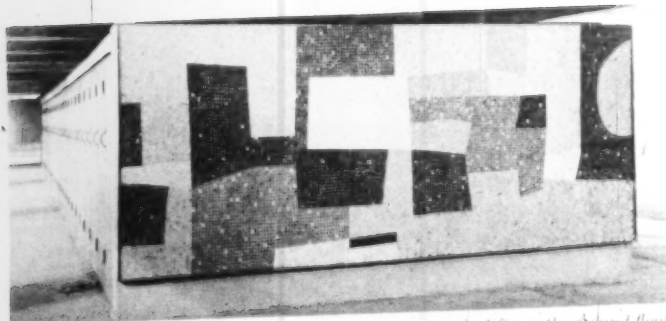
FLATS AT LAMBETH

ARCHITECT: L. G. CREED



first and second floor plans

key
1. living room
2. bedroom
3. kitchen
4. bathroom



8, abstract mosaic mural by Malcolm Hughes, opposite the lifts on the ground floor.



7, south elevation, showing recessed private balconies.

This building in Royal Street, Lambeth, provides accommodation for 280 people displaced by the rebuilding of St. Thomas's Hospital. The structure is on a mass concrete foundation, and the columns at ground floor level are set at 20 ft. 6 in. centres to give a feeling of lightness and provide views across the site. The balcony fronts, end walls and roof parapet are of precast bush-hammered granite concrete; all the window panels are of pre-fabricated softwood. The floors are finished with thermoplastic tiles. Heating is by convective stoves which also supply hot water in winter; there is an immersion heater for summer use. Contrasting colours have been used externally, blue on the soffits of the staircase and pink horizontally along the whole length of the block to emphasize the recessed balconies.

BOOKS

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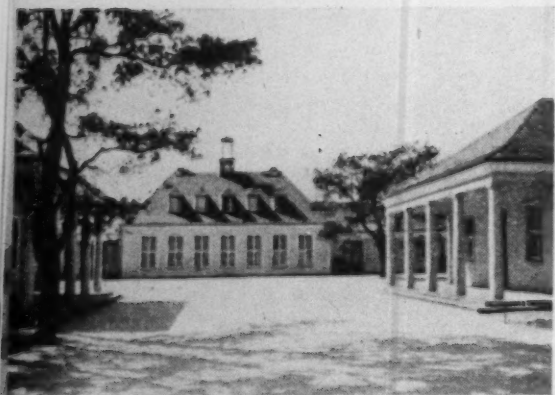
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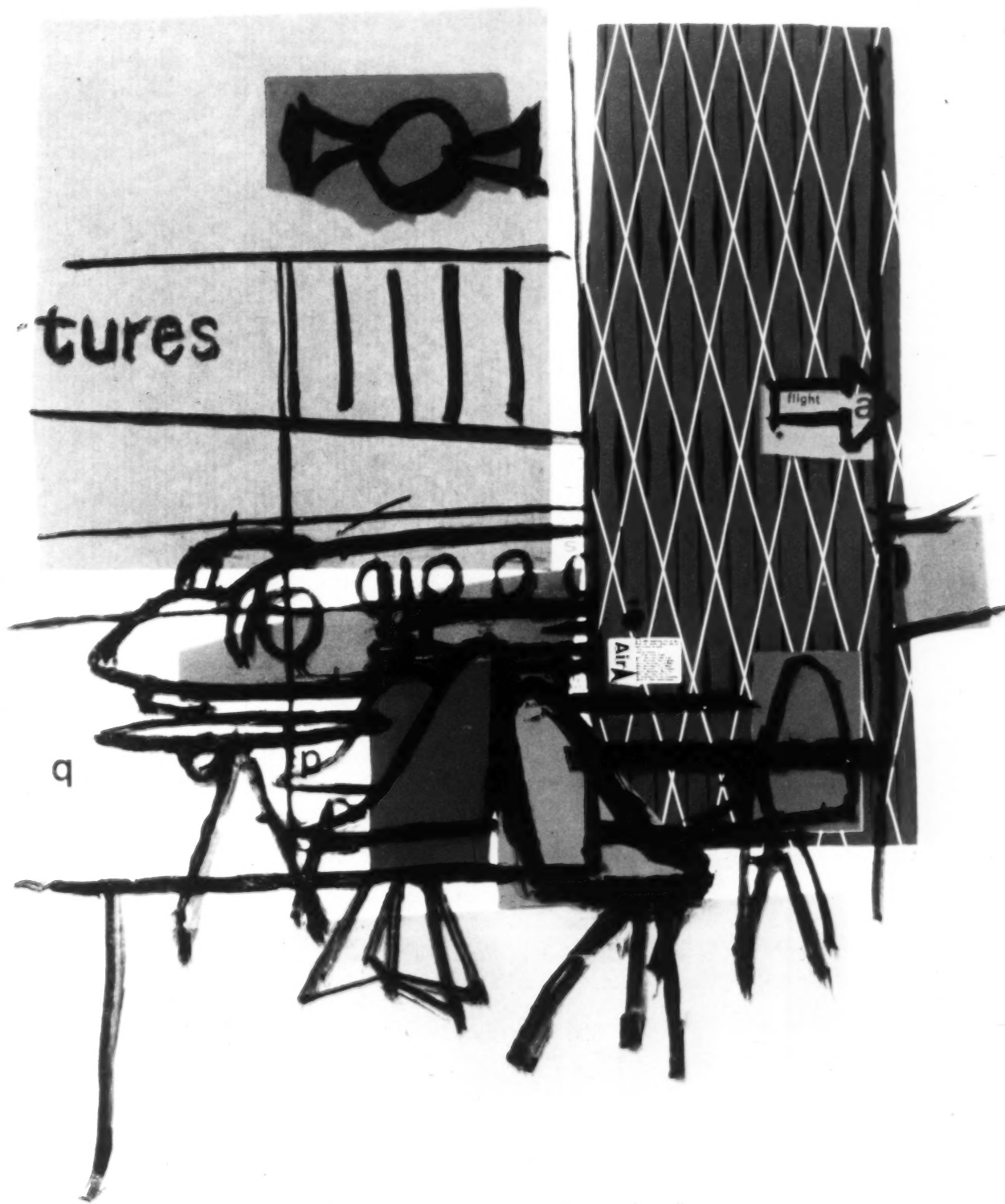
Shorter Notices

LE CORBUSIER: OEUVRE COMPLÈTE (VOL. VI) 1952-57. Girsberger, Zurich, 48f.

The fifth volume of Le Corbusier's complete works showed him attaining, at last, the recognition and employment he deserved; the sixth shows him a master full of years and works, with a practice scattered over a quarter of the globe. If he has a 'late style' in the accepted sense of the word, then this volume records it, but the reader is almost certain to be struck by Le Corbusier's continuing variability, rather than by the emergence of any constant factors in these late works. Most of them are in India, either at Chandigarh—the Courts of Justice, the Secretariat, the projects for the Governor's Palace and Parliament House—or at Ahmedabad—the Museum, the Millowners' Building, the Villa Shodhan, and the Sarabhai House—and they exhibit four radically different approaches to architecture in the tropics. The Courts of Justice is a row of compartments under an independent sunshade structure; the Secretariat resembles an *unité* (like Nantes, also in this volume), and the Millowners' Building belongs to the same persuasion of *brise-soleils* and so forth; the Museum follows the traditional Muslim recipe of blank exterior walls and a central court; while the Sarabhai House resembles the Jaoul houses (again, illustrated in this volume) in its use of long tunnel-vaults with closed sides and open ends. In spite of all these exotic buildings in exotic sites, however, there can be no doubt that the strangest and most intriguing building is that with which Volume VI begins, the Chapel at Ronchamp, vividly demonstrated in a series of superb photographs, that make the physical form of the building, its spatiality and its illumination, as clear and comprehensible as photographs ever could, and still leave the psychological motives behind its creation and its shape as secret as they ever were—and probably ever will be. Q.S.C.



School in one of the housing neighbourhoods of the new town of Stalinstadt, E. Germany.



A SERVICE FOR ARCHITECTS

WPM

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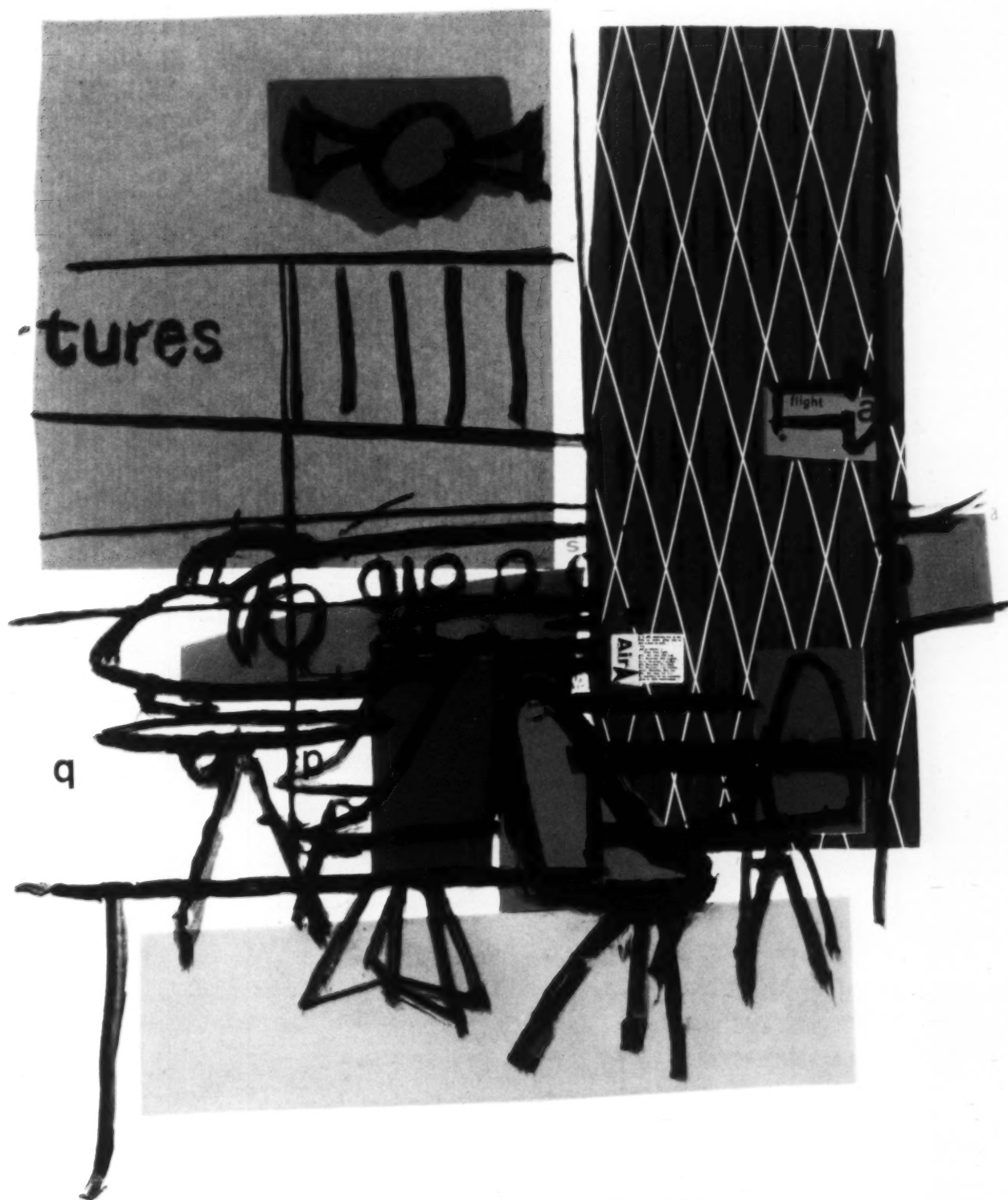
Shorter Notices

LE CORBUSIER: OEUVRE COMPLÈTE (VOL. VI) 1952-57. Girsberger, Zurich, 48f.

The fifth volume of Le Corbusier's complete works showed him attaining, at last, the recognition and employment he deserved; the sixth shows him a master full of years and works, with a practice scattered over a quarter of the globe. If he has a 'late style' in the accepted sense of the word, then this volume records it, but the reader is almost certain to be struck by Le Corbusier's continuing variability, rather than by the emergence of any constant factors in these late works. Most of them are in India, either at Chandigarh—the Courts of Justice, the Secretariat, the projects for the Governor's Palace and Parliament House—or at Ahmedabad—the Museum, the Millowners' Building, the Villa Shodhan, and the Sarabhai House—and they exhibit four radically different approaches to architecture in the tropics. The Courts of Justice is a row of compartments under an independent sunshade structure; the Secretariat resembles an *unité* (like Nantes, also in this volume), and the Millowners' Building belongs to the same persuasion of *brise-soleils* and so forth; the Museum follows the traditional Muslim recipe of blank exterior walls and a central court; while the Sarabhai House resembles the Jaoul houses (again, illustrated in this volume) in its use of long tunnel-vaults with closed sides and open ends. In spite of all these exotic buildings in exotic sites, however, there can be no doubt that the strangest and most intriguing building is that with which Volume VI begins, the Chapel at Ronchamp, vividly demonstrated in a series of superb photographs, that make the physical form of the building, its spatiality and its illumination, as clear and comprehensible as photographs ever could, and still leave the psychological motives behind its creation and its shape as secret as they ever were—and probably ever will be. q.s.c.



School in one of the housing neighbourhoods of the new town of Stalinstadt, E. Germany.



Haywards wallpaper: "Festa" No. 571. Drawing by Dennis Bailey.

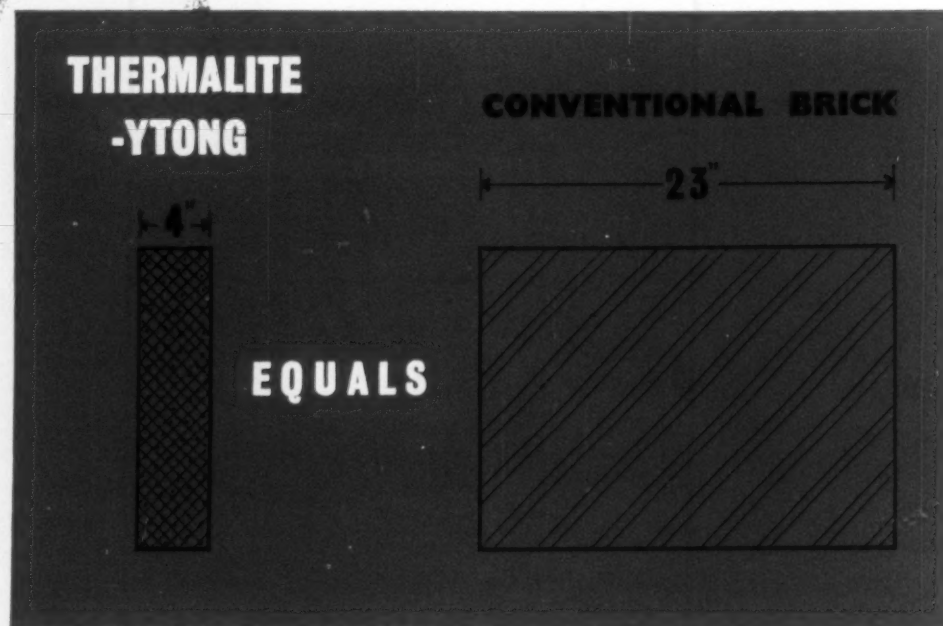
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EXHIBITIONS

NIARCHOS COLLECTION

There are many fine pictures in the Niarchos collection but there was something extremely disturbing about the atmosphere of the exhibition at the Tate Gallery. Unfortunately, I will not be able to say what was wrong without giving the impression that I was looking for trouble, and I rather envy the virtuosity of those critics who managed to give the exhibition a cool treatment without finding fault with anything.

Actually, I approached it with far less prejudice than many of the critics: I am not in the least disturbed, for instance, by the fact that Niarchos has become one of the most important private collectors of nineteenth-century French masters by the simple expedient of taking over someone else's pictures. He is a man who has grown used to making big deals, and from that point of view his collection is now a proper reflection of his financial standing.

He started to buy pictures in 1949, and made a modest enough beginning, for in the first twelve months he acquired only a watercolour called 'A Voice from the Cliffs,' 1, by the nineteenth-century American painter Winslow Homer—a very good



picture in an unfashionable idiom—and a small oil by Renoir. Since making his bulk purchase of the Edward G. Robinson pictures, which accounts for forty of the seventy-two works shown at the Tate, he has continually added important paintings, often at hair-raising prices. Some of these acquisitions have destroyed the homogeneity of Robinson's refined and tasteful collection in a manner that many people find brutal and insensitive, but others have marvellously enriched the Robinson group on its own ground.

In his less flamboyant way, Robinson has been as much concerned with the 'gilt-edged' as Niarchos. He was essentially a collector of nineteenth-century masters of the French School, and although he bought pictures by famous twentieth-century artists they were almost always

works that were conceived in a nineteenth-century spirit. His approach to the moderns was timid in the extreme: his Matisse was painted before the turn of the century, his Picasso, which was not on view at the Tate, was painted not later than 1901, and he was content to let his two elegant but excessively mannered Modiglianis represent the 'modern movement.' It was perhaps his nineteenth-century approach to modern painting that landed him with a very bad painting of the nude by Segonzac, and although it seems to have been his only serious mistake, it has so to speak perpetuated itself, since it is the one really unsatisfactory picture in the Niarchos collection.

The Robinson pictures are rather like the children of divorced parents who treat their new step-father with coolness and suspicion, and it is fascinating to see what Niarchos is doing to break down their resistance. He flatters them at one moment and bullies them at another, and I think that the largeness of his gestures is winning them over. I was not helped to arrive at this conclusion by the presentation at the Tate. On the contrary, it was the totally unimaginative hanging that cast a shadow over the collection and gave it the look of being a mere aggregation of precious merchandise.

It is, of course, absolutely barbarous of the Tate to expect the Arts Council to hang good pictures in the gloomy ante-room to the galleries grudgingly assigned to temporary exhibitions. The Niarchos pictures could not have been decently arranged in less than three good-sized galleries, but were allotted only two, with the miserable ante-room thrown in for bad measure. Nevertheless the inadequacy of the wall space did not account for the worst features of the hanging.

It was fatal to the presentation of this particular group of pictures to try to abide by the conventional view that the work of different periods and schools should be kept apart. There were not enough works outside the main Impressionist and Post-Impressionist group to fill a gallery, so they couldn't be properly isolated, but the 'next best thing' that presented itself to the hanging committee was the worst



possible solution: the pictures by El Greco, Goya and Rubens were pushed into the end gallery along with an overflow from the main gallery. This desultory and meaningless way of hanging pictures made the end gallery look like a lumber room and gave one the unpleasant impression that the old masters in the collection were being treated as indiscriminate purchases.

I am harping on the dilatoriness of the hanging because the collection is of a



kind that offers particularly good material for lively and illuminating juxtapositions.

El Greco's 'Pieta' could have been flanked by some of the Rouaults, for these two painters share an intense religiosity which is as evident in Rouault's large and impressive picture of darkly blazing flowers as in El Greco's grey Christ. Goya's insouciant use of black in his portrait of Donna Joaquina Candado would have contrasted effectively with 'The Black Clock,' 2, in which Cézanne treats black as an almost insuperable problem. The Rubens self portrait would probably have been the most difficult picture to place sympathetically, since at first sight it looks like a hundred other Flemish portraits of the period, but it might not have looked altogether amiss beside Cézanne's self portrait; they share at least a sharp yet not too unforgiving self-scrutiny; other-



wise, it would have been an understandable kindness to find Rubens a position near the Renoir nude, 3, which most resembles his own great images of the Junoesque.

The neatness of the Winslow Homer was treated as an embarrassment, and the picture was hung behind the girl who was in charge of the catalogues, but if it had been tried out against the neatness of Seurat's coast scene I doubt if it would have been put out of countenance. In any case the Seurat, surrounded as it was by more freely painted pictures, didn't look at all happy.

Manet's watercolour of Olympia, instead of being hung beside Cézanne's 'Aqueduct and Lock,' where its wonderful transparencies would have found appropriate company, was allowed to make a whole line of Renoirs look dull in colour. Oddly enough, the one Renoir in the collection that could have resisted interference from the Manet—the sumptuous 'Mosque at Algiers,' 4, acquired by Niarchos at the Biddle sale—languished in the ante-room.

The five works by Degas—four of them are pastels of dancers—were also in the ante-room. The entrancingly ungraceful 'Dancer Leaving her Dressing Room,' 5, deserved to be in the main gallery. The other pastels are a little disappointing and offer no sort of challenge to Lautrec's oil sketch for the poster of 'Jane Avril Dancing,' 6, which was to my mind one of the chief glories of the exhibition.

The collection is likely to go on expanding, and if the quality doesn't fall it will not much matter how many schools and periods get into the mixture: on the basis of 'only the best is good enough,' it will always have its own kind of homogeneity.

Robert Melville

1, model of Michael Laird's scheme for an hotel and festival centre on the edge of Princes Street gardens.



TOWNSCAPE

HIGH BUILDINGS IN EDINBURGH

Edinburgh is a city of many splendoured things to delight the antiquary—but it also has building of such mediocrity and outrage in some places that recent propositions for high building in these very places are the more interesting.

Until lately, the city has been comparatively free from the ramifications of developers—or at any rate those who are anxious to cram the maximum lettable floor space on the most central city sites—but these enterprises may not always be hard to reconcile with the encouragement of worthwhile building interests. Implicit in these circumstances is the decision (or lack of this) of the planning Committee, who, according to a recent press report from the Town Planning officer '... have adopted no particular standard; it is rather based on the general appearance of the building. One thing the city is against is the creation of "canyons" or towering buildings on either side of the street—such as in New York.' In this brief survey, we have taken account of schemes for high building projects (both factual; and those for demonstration purposes only), together with local press information, in an endeavour to establish a proper report on this precarious situation. There are three main instances of reference to this question which are illustrated here:

(A) Project for Hotel and Festival Centre by Michael Laird in 1957, 1, 2. In this case the site is on the south-west fringe of Princes Street gardens and allows exceptional possibilities for high building. The scheme



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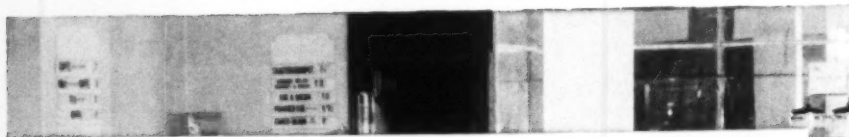
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2, the hotel from Princess Street gardens.

is of high plot ratio and provides for underground car parking over the whole basement area. The following quotation from an article by 'The Scotsman' leader writer, A. J. Arthur, is relevant: 'It would be necessary to forget the passionate prejudice against high building in Central Edinburgh. The cry, "It would compete with the Castle!" is usually enough to put the veto on anything over 60 feet within a mile or two. Michael Laird has defended his hotel block against this charge, in a way I find very convincing. The one object, he says, is a semi-transparent tower, the other a dark, opaque massif. . . .'

(B) Rentable office building in Drumsheugh Gardens. Although the building is only eight floors high (including the recessed top floor) it must count as a high building in its relations, if any, by scale and size to the form of its immediate neighbourhood. 3. The developers (Western Estates & Properties Co.) cannot be held responsible for the pale yellow artificial stone finish which the City authorities have insisted upon and was in fact selected by them. 4. Apparently, it is quite usual practice in Edinburgh for the Planning Committee to demand a selection of

material samples from the applicant from which they, the Planning Committee, may finally choose.

(C) Projects for high buildings in George Street. Recently the Lord Provost has declared that George Street may well become the commercial centre of the city, but only now is there a plan for its development, the question having been referred to a panel of consultants for resolution in October 1957. In the interim period ideas were forthcoming from private architects



3, the Drumsheugh Gardens site today.



4, proposed office block in Drumsheugh Gardens.

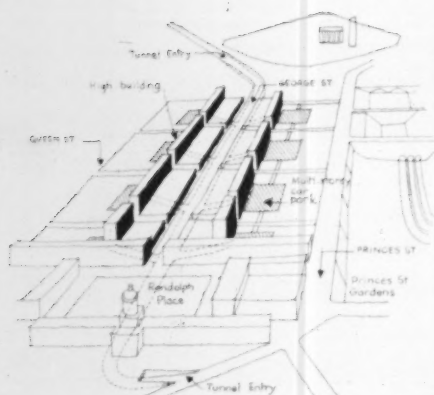


5, development of George Street suggested by the author showing high building set back from two-storey shops on the pavement.

and in studying these proposals we should have regard for the fact that a commercial development programme here will demand a plot ratio of, say, 5:1, some provision for pedestrian shopping, and increased car parking facilities. The proposals may briefly be summarized in chronological order:—

- (a) New shop and rentable office accommodation on a gap site of about 70 feet frontage for Modern Property Developments Limited by Michael Laird (assistant architect: Douglas Laird). An application for guidance over this building remained with the Town Planning Authority from September 1957 (when it was stated that the permissible plot ratio would probably be at about 5:1), until May 1958, when the findings of the panel of consultants took effect so that permission was refused.
- (b) Proposal by Alan Reiach for a framework in George Street within which buildings of up to 120 feet in height may be accommodated. Although independently prepared, this proposal takes account almost exactly of the project outlined in preceding paragraph, and Alan Reiach has made it clear in an article in 'The Scotsman' that he considers this, the crown of the hill, a proper place for high building in Central Edinburgh.
- (c) The situation has been spiced by publication this June of the conclusions about George Street from the Panel of private consultants to whom the question was remitted. Their recommendations have been for no building above the existing terrace height on the street frontage or about 75 feet on a second higher building line set back on the site. This report restricts George Street redevelopment to a plot ratio of about 3½:1, but suggests that if a greater concentration of buildings became essential they could be spread into an area near the East End and perhaps around St. James' Square. 'The panel suggested that façades of all streets should be constructed of natural sandstone, and faces of the lanes and all high buildings should be of artificial stone to match the natural stone.' It remains to be seen how this resolution can be reconciled with contemporary building science and architectural quality.

The whole problem is bound up with questions of traffic circulation and this aspect is rapidly coming to a head regardless of these proposals for redevelopment. The City's proposal for a new traffic roundabout in Randolph Crescent has met with strong objections from several



6, the George Street tunnel and its relation to the new buildings.

responsible sources. This proposal would not only divert more through traffic by the unsuitable road pattern of the New Town terraces but would seriously affect the character of the Town itself. There can be no doubt that long-distance heavy traffic should be diverted a long way from the town centre and that some more radical proposal is necessary for dealing with the central traffic problem. It has been suggested that a tunnel below George Street, which would surface at perhaps Randolph Place at the West End and near St. James' Square to the east, 6, would be an invaluable asset. This tunnel could also have access to the cleared island sites in the lanes behind George Street where multi-level car parks (also serving Princes Street) could be built.

This last idea surely bears investigation together with the additional finances which might be available to help its construction through redevelopments to higher rateable values on either side. In London and in Glasgow the applicant does know more accurately at the outset where he stands, at least in relation to plot ratios, but there is as yet no code for Edinburgh. Obviously the next question Edinburgh must ask itself is, 'do the same opportunities exist?' It would be odd indeed if Patrick Geddes' own city regarded Town Planning simply as a restrictive practice.

In any event these matters of moment will have to be resolved somehow, sometime, in Edinburgh. Will this capital city acknowledge the extraordinary opportunity which attends these problems? If this is realized with foresight and imagination then a new townscape will be created which should rival the bold courage of the existing 'Old' and 'New' towns and which, as the Town Council must appreciate, incidentally represents an investment offering greater and more rapid return than any over-cautious half-measure. Certainly the proper answer will not lie in the imposition of any inflexible plan and neither in some incomprehensible ideology which cannot be defined to the architects concerned. It will be interesting indeed to see what arises. **M.L.**

OUTRAGE

CLOUDED YELLOW: DISILLUSIONMENT IN ARLES

The despoiling of shrines—though an active national sport in which Britain, we feel sure, would wish to yield to no one—is not, alas, wholly confined to this country.

You will remember, for instance, the



1, Van Gogh's 'Yellow House'.

radiant 'Yellow House' sweating in Arlesienne heat through Van Gogh's incandescent canvas, 1. The place is a domestic dream, a corner of perfection, seen through a haze of southern light and surrounded by a naïve architectural good-neighbourliness. You carry it in your mind as something set aside from the world that will always remain so and will always await your visit when you've time. You were wise never to go—the place would be difficult to find in any case, and the house is no longer there. For the Arlesienne French, by means no more deliberate than complete indifference, have succeeded in obliterating any memory of Van Gogh and the Yellow House today. Worse, by going their own shabby twentieth-century way, they have also succeeded in so polluting the site as to make it unrecognizable. If you are morbid enough to seek the place out you will find no wall-plaque to



2, the scene as it is now.

help you—instead an infestation of rubbishy decay cheek by jowl with a petty proletarian commercialism. The house had an ideal setting, a corner site shaded by trees, and backed by a dignified four-storey block that has also suffered insult. The wooden-shack café, 2, with its corrugated roof, messily obscures two floors of the sunny side. The front bears the familiar stigmata of French telephone fittings, together with the rusted relics of a decayed garage. The back, 3, is just a rubbish tip, litter-bin, car park, dirt store. And the



3, the dumping ground behind the house.

house behind, packed to the roof with no doubt happy families, flies from most windows an abundance of drooping washing. It is beyond us here to attempt to interpret the French provincial mind, their denial of Van Gogh in general and the site of his house in particular. Apart from the café, which should never have been allowed, the whole place could be cleaned up in a few days at very little cost. Suffice it to say that the effect of the Yellow House site is one of quite ordinary modern desolation in front of a building which, through its magical associations, would still merit quite extraordinary care. **Laurie Lee**

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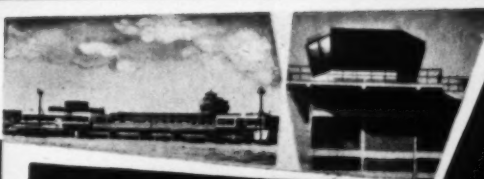
As part-compensation for the previous outrage, here is an example, also from the South of France, how an apparently hopeless state of affairs was turned to good account.

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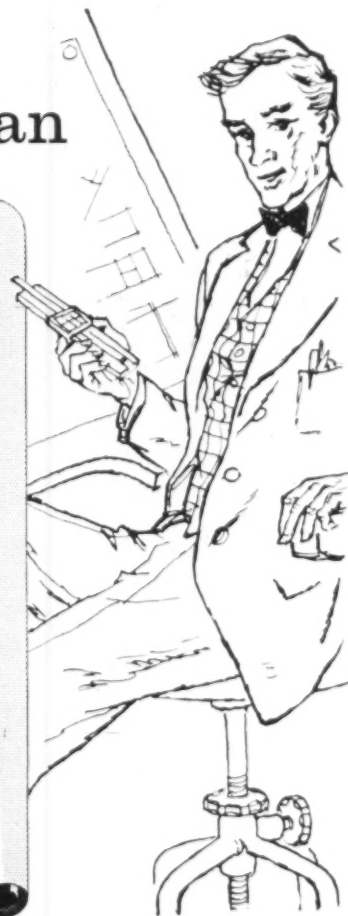
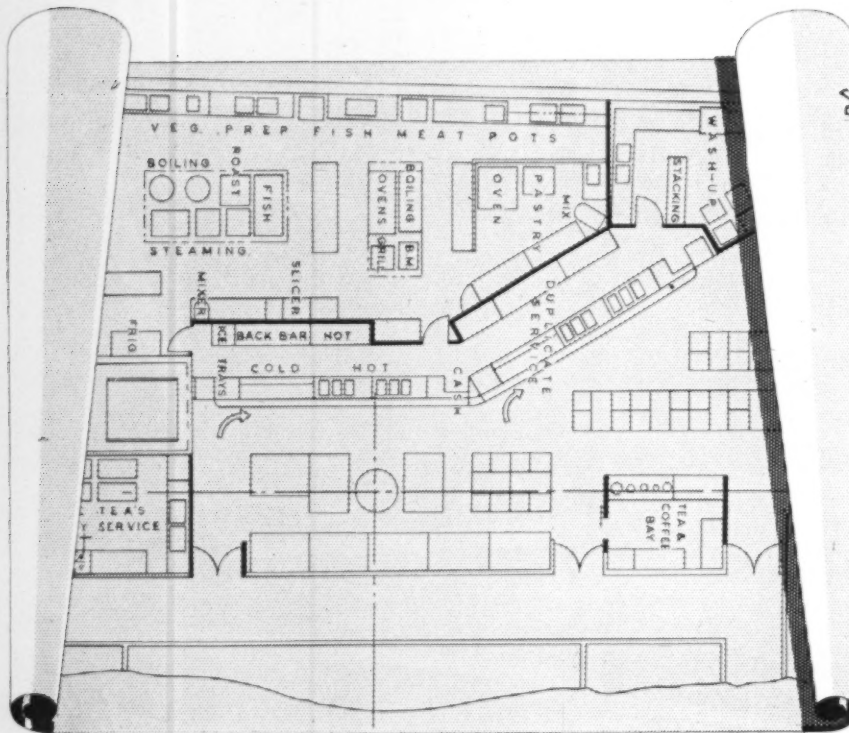
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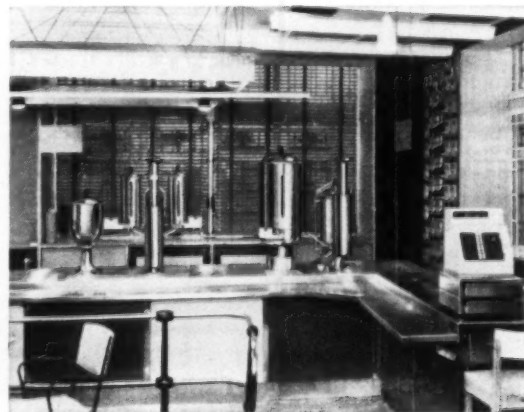
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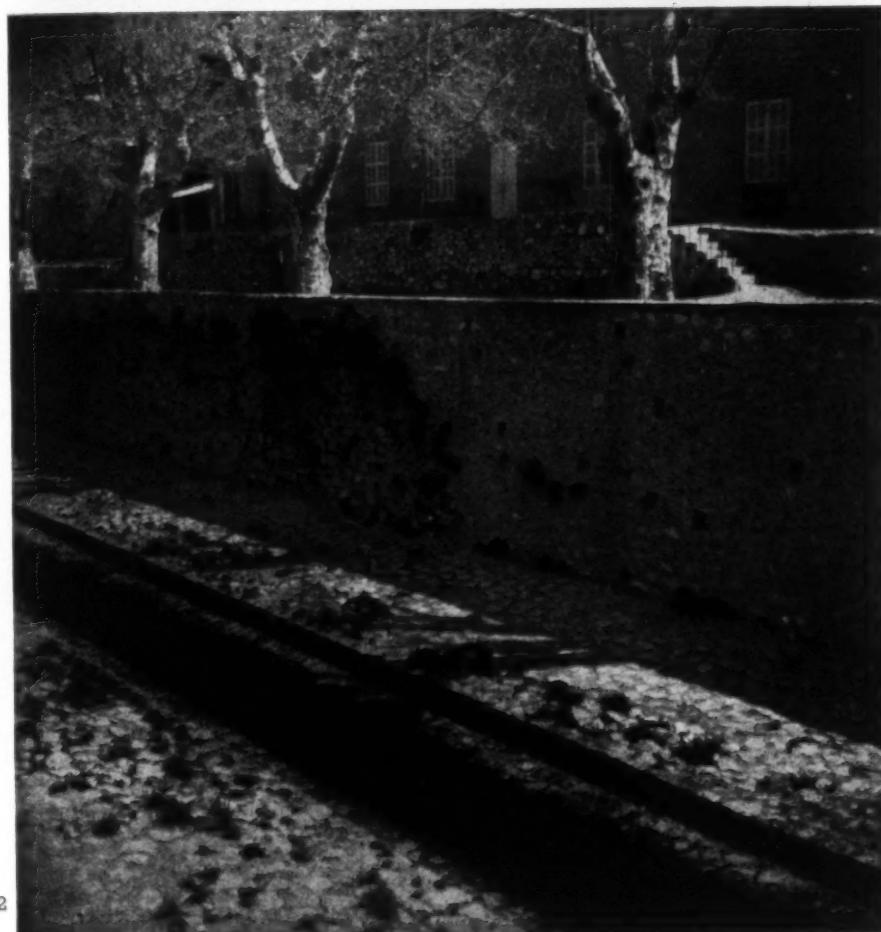


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1, dried up river bed at Menton. 2, Roquevaire's solution of the same problem.

of a small stream, which may be a raging torrent when it is raining or the snows are melting in the hills but for the greater part of the year is a mere trickle between the stones. Such dried up river beds are among the most characteristic features of southern France, and, indeed, of most of the Mediterranean littoral, and with their weeds and the rubbish that gets left in them they are also—at least in urban surroundings, where a measure of orderliness is proper—among the least attrac-



3, another view in Roquevaire.

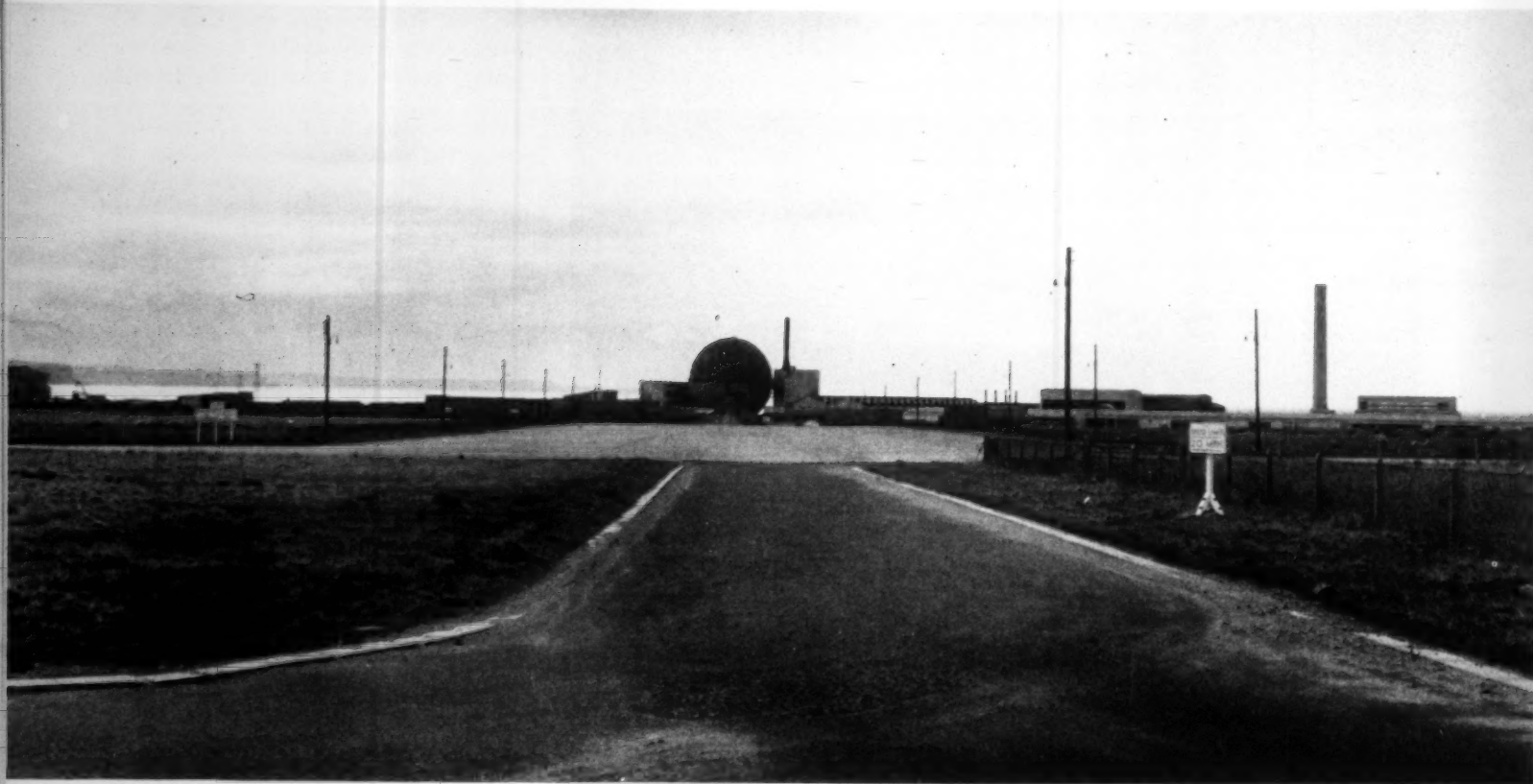
tive; the first photograph, taken at Menton, shows the kind of thing, and it will probably be agreed that less promising townscape material would be hard to find. The remaining photographs show how the town of Roquevaire has solved the problem of its river by paving its bed and sinking a central channel just wide and deep enough to contain its normal summer flow. Functionally, the treatment is justified by its making what water there is readily available and ensuring that it keeps on the move instead of collecting in stagnant, mosquito-breeding puddles; aesthetically, the clean lines and smooth yet well-textured surfaces are all that could be desired.

The dried up torrent bed is not a problem that troubles us much in Britain. Nevertheless, we have plenty of other problems whose solution demands the same spirit and the same sensibility as the citizens of Roquevaire have shown in this.

Andrew Hammer

COUNTER-ATTACK

The image of Dounreay, planted by artists' impressions and carefully posed photographs, must be clear in everyone's mind: sphere and chimney standing out stark and symbolic on the rocky north coast of Caithness. What the northern traveller finally sees when he travels west out of Thurso (133 miles from Inverness, 680 miles from London) is something looking exactly like a well-mannered fish-curing factory on the Thames Estuary, with a lot of mess around it and an



1, Dounreay as it is.

unexpectedly large ball in the middle of it. It is sound, clean, respectable, modern, worthy, decent, and utterly and irretrievably dull.

Dullness can be a virtue—Gower Street is dull, and thank goodness. But if there were any job which cried out for an imaginative solution it was Dounreay: exciting site, exciting function, exciting basic shapes and plenty of justifiable symbolism ready to hand without needing to be desperately

dragged in. The main buildings when first published seemed likely to do justice to the programme; they have somehow been submerged by careless design of all the ancillary buildings and then by all the accumulated litter that the various authorities concerned could slap down without caring a damn whether it was Caithness or Camberwell: wires, poles, officious notices, bad fences, arid roadmaking, an electricity substation. The two illustrations show the difference between what could have been and what is: the image, drawn by Gordon Cullen in 1956, 2, and the reality photographed in 1958, 1.

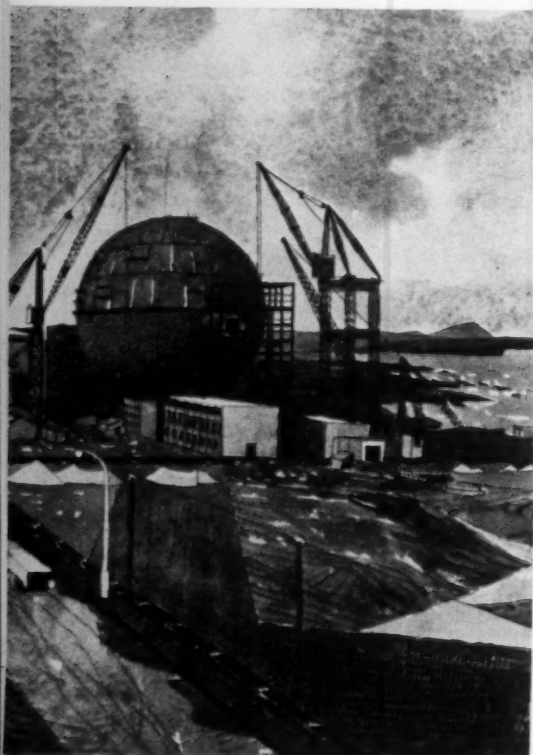
And what else could have been done? In the existing framework, probably very little: whatever imaginative idea was proposed, there would have been some little man at a big desk to stop it. But the effects of the little men would disappear if the will were there; so suppose that the project was in charge of an atomic scientist who lived outside the laboratory as well as in it, someone of the calibre of Bronowski, and suppose that the job was done by a small tough-minded architectural team who were all obsessed by the site and the job. Then there might have been something expressing the idea of Dounreay, to appeal to the human spirit as well as to the calculating machines. The sphere might have been glossy white,* the chimneys and sheds jet black, instead of the whole lot being an indeterminate grey (the black hangars left over from the wartime aerodrome are the most real buildings on the site). The offices and ancillaries could have become a pattern of connected covered ways out of the weather—a winter in Caithness is not the same as the gentle Berkshire weather of Aldermaston or Harwell, as the transplanted technicians will find out—using every possible means to screw themselves into the ground, as the local vernacular housing does, so that the sphere and the sheds could have risen up sheer above a set of cowering whalebacked buildings; all the

* Obviously I know nothing at all about the particular requirements, and these suggestions may thus be nonsensical. But they are meant to show the type of solution that was needed.

extras outside the perimeter could have been handled coherently and intelligently instead of being plonked down by the yard as though the site were another housing estate.

What it would all add up to would be expressive function rather than just functionalism: a situation where the needs of the atomic plant are not only satisfied physically but are expressed, through the physical requirements, to be a satisfactory image for the spirit as well. That is the idea behind the simplest features of the functional tradition: the handrail that expresses the idea of clinging-on as well as being able to take the right statistical load; the bollard which expresses the idea of stopping as well as having the necessary physical dimensions; on a larger scale the town which expresses the idea of living together as well as conforming to the by-law standard. For lack of this quality many of our older architects, whose names were so bright in the 'thirties, are producing dozens of buildings like Dounreay; and the younger architects are reacting in despair with a vocabulary of pointless bloody-mindedness. Simultaneously there are the big jobs done by the big offices that are under-designed, and the tiny private houses and office blocks done by newly qualified architects which are over-designed, loaded with monstrous doses of architectural symbolism: it is not a healthy situation.

There is an ironical twist to all this. Dounreay is a long way away, and fewer and fewer architects and critics actually bother to go and see buildings. So the artist's perspectives and posed photographs will probably win after all—an entirely false image of Dounreay may well inspire less mediocre countries, in their atomic power programmes, to create the sort of thing that Dounreay should have been. That, after all, is how many of the best classical buildings in Northern Europe were designed. But to keep the record straight, there ought to be a small uncouth voice in the background blowing the gaff; and that seems to be the present vocation of Ian Nairn.



2, Dounreay as it could have been.



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ACKNOWLEDGMENTS:

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Monsanto Chemicals Limited, Oil additives engine test laboratories, Newport.

St. Aidan's Church, Speke, Liverpool. Architect: Bernard A. Miller, B.Arch., F.R.I.B.A.

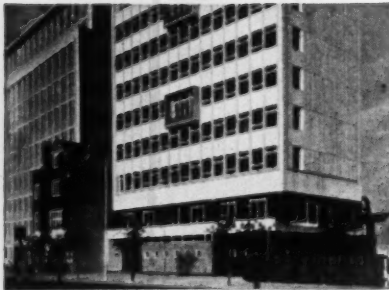
Office Building. Architect: Richard Sheppard & Partners.

Broadgate House, Coventry, Warwickshire.

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by courtesy of the Rector and consultant Architect

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is shown in
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		Initial test	Retested after 3 years' natural weathering
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Cement Block	untreated	6.0	5.9
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SUSPENDED CEILINGS PART II

by Peter Matthews

The suspended ceiling has come to us as a screen to hide the paraphernalia of the services. It was only therefore a matter of time before the services became incorporated in the ceiling surface. In this second article the author, Peter Matthews, considers products on the market which have been designed to provide heating or lighting through the ceiling. This article (and its predecessor in the July issue of the AR) should be read in conjunction with Looking Up on page 161 of this issue.

In the first of these two articles we considered the straightforward suspended ceilings which attempt no more than to conceal the services and, in some cases, to provide special sound deadening. In this second article we complete our survey by listing and commenting on the ancillary equipment which has been designed specifically for building into suspended ceilings and to provide heating and lighting. These fall into five categories. First there are the modular recessed lighting fittings. As these are legion, it is unfortunately not practicable to follow our usual practice of listing each separate product; instead, as we explain below, we group them into their main classes, discussing the characteristics of each and giving an average price figure for each standard size. After the recessed lighting fittings a mention is made of visible suspended trunking systems, though these need not be used in suspended ceilings. Next comes the fully illuminated suspended ceiling, in which the actual translucent surface has become the ceiling; these, as they are relatively few, can be taken product by product. The same is true of heated ceilings, which are of two types. Of these we take first the electrically-heated ceilings, in which the heating element is actually incorporated in the ceiling; and leave till last the water-heated suspended ceilings in which the actual heat source is remote.

Lastly there are two words of warning. The first concerns prices. These are approximate only, and are not based on identical assumptions. The use of uncorrelated prices in this way is open to objection; but it is not practicable to give fully comparable prices and it is our opinion that it is of more use to an architect to have some indication of cost (with the assumptions given whenever possible) than to have none at all. He must in any case get his final prices from actual estimates.

The second warning is one which must always be made with this type of article: namely that we have been able to include only those products which we have been able to find at the time of going to press, and that the list may well be incomplete.

Modular recessed lights

Manufacturers of lighting equipment have designed recessed fittings to fit exactly into the 2 ft. module which seems to have emerged as a standard ceiling panel dimension, and although most of them claim to have co-operated with certain specific ceiling manufacturers, the fittings are really standard specials and can usually be adapted to suit other systems.

It is therefore very difficult to compare costs except by quotations for a specific job, but the prices for the standard sizes might be expected to fall close to the following (prices nett to user):

2 ft. 0 in. x 2 ft. 0 in.	£12	fitted
2 ft. 0 in. x 4 ft. 0 in.	£17	with
2 ft. 0 in. x 6 ft. 0 in.	£24	plastic
		louvres

Prices for dished plastic diffusers would be similar but subject to 2½ per cent purchase tax.

The same fittings containing clear glass would be appreciably cheaper, i.e.:

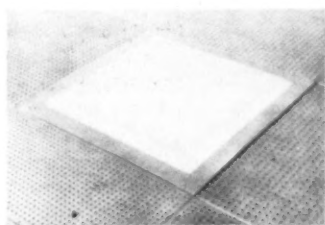
2 ft. 0 in. x 2 ft. 0 in.	£10
2 ft. 0 in. x 4 ft. 0 in.	£13
2 ft. 0 in. x 6 ft. 0 in.	£19

However, these would also be subject to purchase tax if the glass actually diffused the light.

When planning a suspended ceiling it is important to allow for the minimum depth required for the electrical installation, which can be as much as 10 in. for certain tungsten fittings, but may be as little as 6 in. in the case of fluorescent fittings. Some 'elbow room' is nevertheless welcomed by all concerned.

If the ceiling is intended to give fire protection to the structure above, it might well be advisable to consider some other type of illumination, for although there is no existing law governing this matter, 0.5 per cent of the total area is considered a maximum without additional fireproofing in the USA, which would not give a particularly high level of illumination. Alternatively extra fireproofing could, of course, be provided, but might prove rather costly.

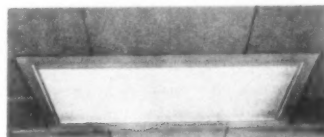
One of the drawbacks of this type of light fitting is the fact that it tends to leave the bulk of the surrounding ceiling in darkness, resulting in glare even if the level of illumination is quite adequate where it is required. This can be slightly offset by the use of light coloured finishes on the surface below, which will reflect upwards to a certain extent. Some of the dished diffusers project below the ceiling surface, 1, and although the light source is still above ceiling level, about 2 per cent ceiling illumination might be ob-



1, Troughton and Young's dished acrylic plastic diffuser.

tained. Light fittings which actually floodlighted the ceiling might overcome this difficulty only to emphasize inaccuracy in the ceiling itself, but in shops it would be simple to arrange for some lights, secreted in fittings, to play up on to the ceiling.

Where flat glass is used for diffusing, some firms leave a gap of about ¼ in. between the glass frame and the frame of the fitting so that there is a transitional strip of soft light between



2, Troughton and Young's fitting with Spot-lite glass.

the ceiling surface and the light source, 2.

Apart from cost, the criteria which may influence the choice of fittings are as follows.

If dimensions are tight, then depth of fitting may be important.

Some fittings are normally suspended independently from the parent structure, which calls for very accurate positioning if any work is to be done before the ceiling is installed. Others are supported on the suspended ceiling structure, but since a

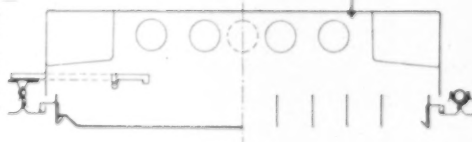
instead of sinking the lights within the surface of the ceiling you use the trunking system which contains the wiring to support the ceiling.

The SGB Flexible Grid is one example which is used to support the panel infilling in a complete modular system, although it may be used on its own to carry individual light fittings. Perhaps the most adaptable trunking is Inver-trunking produced by the AEI Group, 4, the continuous slot in the bottom being filled with a clip-in cover strip between fittings. By opening up the module of almost any of the ceilings described in part I of this article some 2½ in., a strip of this trunking may be introduced to take the place of the standard suspension and permit the flexible arrangement of surface fittings along its length.

The transition between fitting and trunking still manages to look rather improvised and could stand further study.

There are, of course, a host of flush tungsten fittings, mostly circular, which may be incorporated in the ceilings already discussed, but they are far too numerous to examine here.

3, GEC Modular fittings, left with plastic diffuser supported on Burgess Tee Clips, right with open louvres suspended from parent structure in conjunction with Frenger heated ceiling.



4, Inver-trunking system by AEI Group. Left with Burgess ceiling, right with Conduit Tee bolt.



6 ft. 0 in. x 2 ft. 0 in. recessed fitting and gear can weigh as much as 85 lb. this arrangement might not always be possible.

As 2 ft. 0 in. fluorescent tubes with sockets will not fit into a 2 ft. 0 in. grid, some fittings are designed so that the reflector box is tailored to the module and the tubes project through the sides to end plates which are not enclosed. This may lead to the deposit of dirt from above and reduce the lighting efficiency.

Visible recessed trunking

The visible recessed trunking system when used with a suspended ceiling represents the opposite approach from that of recessed lighting;

Fully illuminated ceilings

The veteran illuminated ceiling in this country is the 'egg-crate' louvre and it remains one of the most trouble-free in that it does not collect dust and dead insects. Bearing in mind the once popular ceiling pendant bowls which still abound in suburbia and so frequently are overdue for a scouring, it would seem that to extend this principle to the entire ceiling is not without its drawbacks.

Crompton Parkinson face up to this problem with Modulume and claim that in a clean commercial interior, dry dusting should be carried out at intervals of about two months, with complete washing or damp

SKILL

cloth wiping every nine to twelve months. No doubt this is quite representative and assumes favourable conditions. Luminated Ceilings Ltd. offer special maintenance contracts and cleaning facilities for owners of large installations.

Module pan diffusers are the only ones available in strong colours, which would, of course, be used sparingly.

Corrugated plastic continuous strip diffusers are usually fed into channel support sections at one end, and therefore present special difficulties when the time comes for cleaning the upper surface. There is quite a wide variety of design amongst the open louvre types and perhaps one of the more interesting textures is provided by Paragrid with 'bi-planar' louvres which appear to be very ingeniously designed for accurate alignment and, like so many of the more sophisticated suspended ceilings, was not designed on this side of the Atlantic.

In most cases the void above an illuminated ceiling should be decorated for maximum light reflection, but the exception to this is the SGB Flexible Grid which may be left partly unfilled, in which case the parent structure and services would be 'painted out' in a dark colour. This is not strictly fully illuminated and in any case the lighting has shallow integral reflectors.

Whilst the louvre type ceilings are, of course, acoustically neutral, the void above may be lined with sound-absorbent material. The modular illuminated ceilings (apart from Ionlite) depart from the 2 ft. and, less commonly, 1 ft. modules which are prevalent among the opaque and sound-absorbent ceilings discussed in the first article and adopt dimensions which are appropriate to the spanning capacity of the material or may be conveniently integrated with the available light fittings.

Sylvolume and Lumenator Module ceilings both use a V profile for the visible portion of the grid so that some light plays on the surfaces and softens the joint. The Luminated ceiling, Sylvolume and Module can be fitted with perforated metal sound-absorbent fins which are filled with Fibreglass quilt and clip on to the bottom of the supporting grids. At present no figures are available on their acoustic performance, but they would appear to be more for visual effect than for sound control.

The plastics which are incorporated in these fittings consist of Acrylic sheeting, Fibreglass, Polystyrene, PVC and Vinyl.

Vinyl is non-inflammable and due to its low heat distortion temperature will fall out of its supporting grid and possibly help to smother the flames, leaving the sprinklers free to operate.

Acrylic plastic, however, has better colour and light stability, and together with Polystyrene gives better light transmission, but both burn.

Translucent Fibreglass is only accepted by the LCC for rooflights in comparatively thick sections as a result of combustibility tests, whilst PVC does not burn readily and in some forms may be self-extinguishing.

All these materials tend to produce characteristic toxic gases when exposed to flame and the prospect of being trapped under a blanket of flaming plastic is not a pleasant one.

Finally it might be interesting to note that some architects have affected a considerable saving by mounting a diffuser unit from a fully illuminated ceiling system in a

timber surround and casing made by the contractor.

OPEN LOUVRE SYSTEMS

Atlas Lighting Ltd.

Louveral

Infill: Aluminium 'egg-crate' louvres. Size: Standard panel 33 in. by 33 in., cell size 3 in. by 3 in. by 3 in.

Joint: There is a double fin where panels abut and the corners of panels are chamfered to make way for the suspension which terminates with a visible circular clip stud.

Weight: Approximately 1 lb./sq. ft. Light source: There is a 45° cut-off and the depth of the void above the louvres should be a maximum of 33 in. and a minimum of 18 in.

Finish: Normally white. Approximate cost: Supply only, including suspension, 20s./sq. ft.

Louwerex

Infill: Clear polystyrene interlocking strips reeded on one side, which may be assembled to form an 'egg-crate' louvred panel.

Size: With practice a panel 32½ in. square may be assembled in 30 minutes. The cell size is 2 in. by 2 in. by 2 in.

Joint: The panels are supported on 1½ in. by 1½ in. by ½ in. aluminium T sections (supplied by contractor) or aluminium angles at the perimeter.

Weight: No information supplied. Light source: There is a 45° cut-off and the depth of the void above the louvres can vary from 18 in. to 30 in.

Approximate cost: Supply only, components and hangers (but not including aluminium intermediate supports where required) 13s. 6d./sq. ft.

Louwerex

Infill: Opal plastic diamond pattern 'egg-crate' louvres.

Size: 10½ in. by 9 in. panels with cells 1½ in. by 1½ in. by 1 in. deep.

Joint: Panels are supported on translucent white polystyrene T sections which may be cemented to one side of panels at no extra cost.

1 in. by 1 in. T will span up to 4 ft. 6 in. } 1 in. sag at
2 in. by 1 in. T will span up to 7 ft. } centre
span

Weight: No information supplied. Light source: No information supplied.

Approximate cost: Supply only, Louwerex panels, 11s. 4d./sq. ft.

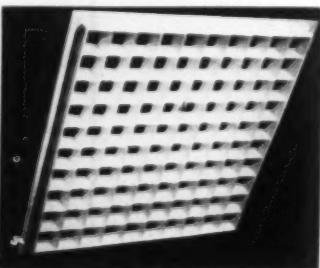
1 in. T bar 2s. 4d./ft. run.
2 in. T bar 3s. 6d./ft. run.

Elco Plastics Ltd.

Elcoplas lighting louvre

Infill: Anti-static treated, light stabilized plastic 'diamond or square 'egg-crate,' 5.

Size: Heavy pattern (1564) 5½ in. by 5½ in. by 1 in. (1½ in. square cells). Light pattern (1884) 10½ in. by 9 in. by 1 in. (1½ in. square cells). Also in units 15 in. by 12 in. by 1½ in.



5, Elcoplas lighting louvre.

light pattern (2025) (2 in. square cells). They are completely self-supporting in panels up to 6 ft. by 3 ft.

Joint: Interlocking corners assure alignment. Extruded plastic Ts are available (6 ft. to 8 ft. long) to support edges.

Weight: Rather less than 12 oz./sq. ft.

Light source: Angle of light cut-off 25°.

Finish: Opal colour.

Approximate cost: Heavy pattern, 2s. per unit 5½ in. by 5½ in. Light pattern, 4s. 8d. per unit 10½ in. by 9 in.

The panels may be cut with a hacksaw to fit any shape.

Harris & Sheldon (Electrical) Ltd.

Paragrid tile (developed in Canada by J. A. Wilson Lighting & Display Ltd.)

Infill: Anti-static treated, injection-moulded polystyrene, 5.

Size: 1 ft. 4 in. by 1 ft. 4 in. with 'bi-planar' 'egg-crate' construction forming ½ in. by ½ in. apertures.

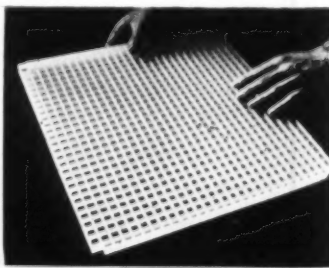
Joint: The tiles span 1 ft. 4 in. between 'U-trax' suspended channels and key together for perfect alignment. Tiles lift out for access to fittings.

Weight: 9 oz./sq. ft. complete with suspension.

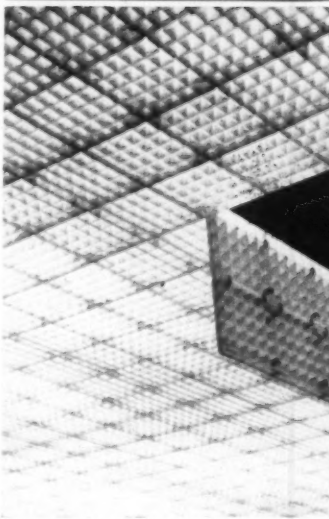
Light source: 40° angle of light cut-off.

Finish: White pearl.

Approximate cost: 10s./sq. ft. includ-



6



7

6, Paragrid biplanar tile and 7, Handlite Louvre-Tile.

ing suspension (supply only). Light fittings not included.

Handlite Louvre-Tile (developed in Canada by J. A. Wilson Lighting & Display Ltd.)

Infill: Moulded styrene plastic, anti-static treated, 7.

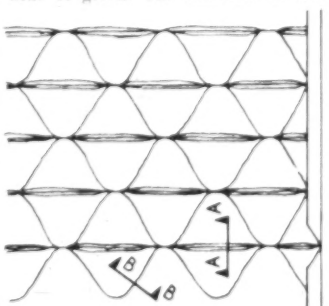
Size: 1 ft. by 1 ft. 'egg-crate' unit 2½ in. deep.

Joint: The basic units are clipped together to form panels 2 ft. by 2 ft., 2 ft. by 3 ft. or 3 ft. by 3 ft. The

panels are fixed to simple clips suspended on the hanger rods, and may be demounted for washing or merely hinged down on either side to give access to services and fittings. Weight: 14 oz./sq. ft. complete with suspension.

Light source: Fluorescent tubes should be mounted on the parent structure at centres not less than twice the distance between the louvre tiles and the tubes. The angle of light cut-off is 45°.

Finish: Available in white, pale pink, blue or green. The coloured louvres



8, Metal Sections' Diffulite. Below, sections through AA, left, and BB, right.

do not affect the colour of the light on the working plane.

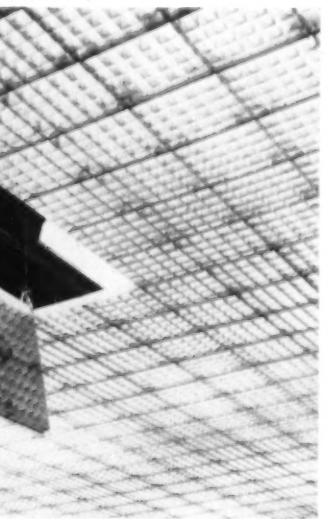
Approximate cost: 14s./sq. ft. including suspension (supply only). Light fittings not included.

Metal Sections Ltd.

Diffulite

Infill: Plastic-coated aluminium strip 2 in. by .010 in., stapled together to form undulating louvre units, 8.

Size: In 4 in. increments up to 7 ft. by 2 in. by 2 in. increments up to 2 ft. 6 in. (i.e. maximum size 7 ft. by 2 ft. 6 in.).



Joint: The bottom flanges of the galvanized pressed steel supporting Ts are visible as a grid which may also support some form of fibreboard ceiling. The Ts are painted to the customer's requirements and are available in a very wide variety of sizes to suit various hanger spacings.

Weight: Diffulite panels only, 4 oz./sq. ft.

Light source: With fluorescent tubes at 2 ft. 6 in. centres the distance

[continued on page 203]

TUBALUX MODULE FITTINGS

TUBALUX MODULE FITTINGS are designed for incorporation with 2 ft. x 2 ft. or 2 ft. x 1 ft. module ceiling panels. The standard fitting incorporates adjustable bolts at each corner for use in ceiling panels manufactured by:—Frenger Ceilings Ltd.; Burgess Products Co. Ltd.; Horace Cullum Ltd.; and with their co-operation we can arrange for the weight of the fitting to be taken by the suspended ceiling. Alternative methods of suspension can be provided for other types of suspended ceiling based on this module.

Module fittings are made from sheet steel which is

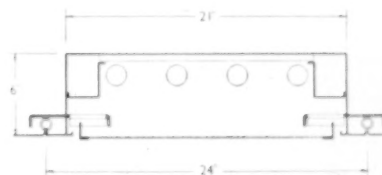
bonderized and finished in white stoved enamel. Instant start or switch start control gear is mounted in two removable channels along opposite sides of the interior and supplied ready wired to a fused terminal block easily accessible for connection to mains supply. Interchangeable diffusers in obscured 'Spotlyte' glass with removable hinged frame, polystyrene louvres, or dished opal 'Perspex', are available.

The diffusers allow easy access for maintenance and cleaning.



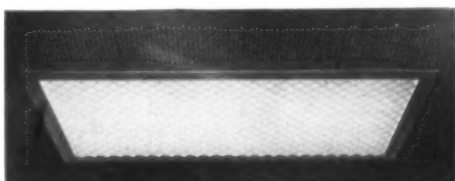
OPENING 2 FT. x 2 FT.

T254 Glass Diffuser
T264 Polystyrene Louvres
T274 Dished Opal
'Perspex' Diffuser
Lamps. Four 20W. 2 ft.



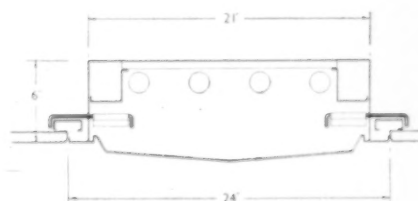
FRENGER CEILING

GLASS DIFFUSER



OPENING 2 FT. x 4 FT.

T454 Glass Diffuser
T464 Polystyrene Louvres
T474 Dished Opal
'Perspex' Diffuser
Lamps. Four 40W. 4 ft.



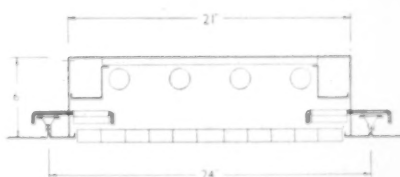
CULLUM CEILING

DISHED 'PERSPEX' DIFFUSER



OPENING 2 FT. x 6 FT.

T554 Glass Diffuser
T564 Polystyrene Louvres
T574 Dished Opal
'Perspex' Diffuser
Lamps. Four 80W. 5 ft.



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143 KNIGHTSBRIDGE, LONDON, S.W.1.
and at 46 Rodney Street, Liverpool 1.

The Lighting Centre
'Phone KENSington 3444

Prices may be obtained on application.

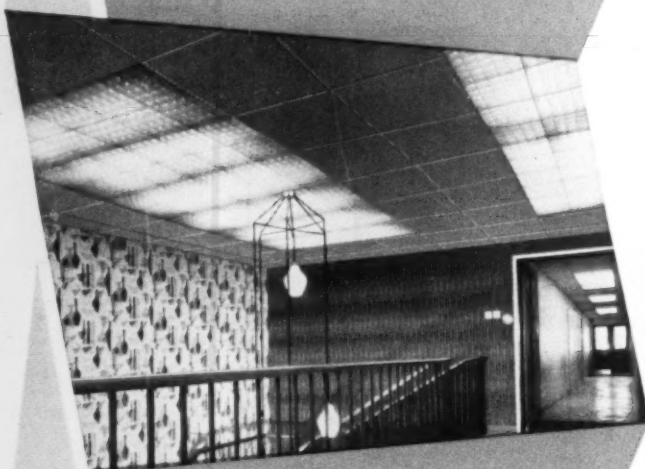


SUSPENDED CEILINGS in MODERN MATERIALS by

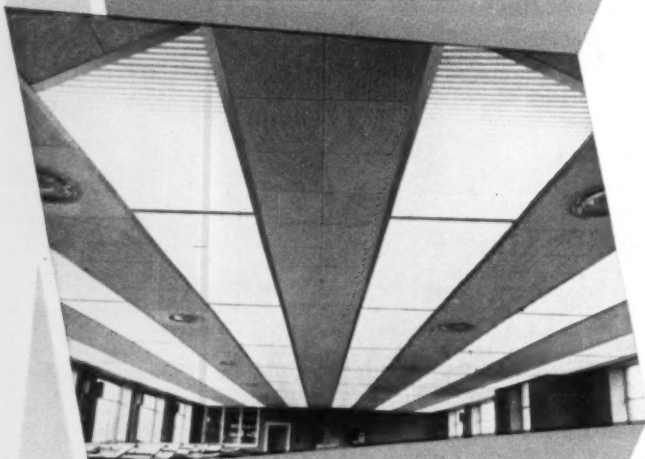
DRAFTSELE LIMITED INSULATION DIVISION



Burgess-Sulzer Heated Acoustical Ceiling, constructed from Burgess Acoustic Tiles in the Thorntree Restaurant at the Wilton Works of Imperial Chemical Industries Limited.



Suspended Ceiling in new office block for Messrs. James A. Jobling & Co. Ltd., carried out in Burgess Acoustic Tiles and Handslite Luv-Tiles.



Suspended Ceiling to drawing office for The Workington Iron & Steel Co. Ltd., constructed from Corrugated Translucent Vinyl Sheeting with surrounds of Unitex Acoustic Tiles fixed by the MeToC "C" Hook Metal Fixing System.

Draftsele Limited and its Associate Company, Draftsele (London) Limited, are specialist organizations which are equipped to undertake contracts of any size in any part of the United Kingdom for Suspended Ceilings, Thermal and Structural Insulation, Acoustical Correction and Sound Deadening. Needless to say the experience of the two companies covers the most advanced developments in all these fields. As far as Suspended Ceilings are concerned, recently-completed contracts include outstandingly successful examples of the following:—

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These are a modern development in economical space heating and acoustical control. Coils of pipe, suspended between a thermal acoustic pad and the acoustic ceiling tiles (which are available in a wide range of colours) are heated by the circulation of water at mean temperatures between 170° and 185° F. In their turn, the coils heat the ceiling tiles by radiation and convection and the tiles themselves become radiating bodies emitting heat. Incidentally the latest Burgess Electrically-heated Ceilings have been installed in the offices of Draftsele (London) Ltd., at 47 The Parade, Leamington Spa, where they can be inspected by appointment.

FULLY-ILLUMINATED CEILINGS

These can be constructed in either Corrugated Translucent Vinyl Sheeting (Lumenated Ceilings) or Handslite "Luv Tiles." With either of these materials, the whole, or parts of the ceiling provide the source of light thus offering endless possibilities in regard to the combination of ultra-modern appearance with practical lighting efficiency. Preliminary consultations on the installation of these and other modern ceilings can be arranged entirely without obligation, on application to:—

DRAFTSELE LIMITED

(Insulation Division) 44 DEAN STREET
NEWCASTLE upon TYNE 1. Telephone: 23696/7

Contractors to: **THE ADMIRALTY,**
THE WAR OFFICE, THE AIR MINISTRY, THE
UNITED KINGDOM ATOMIC ENERGY AUTHORITY,
PRINCIPAL GOVERNMENT DEPARTMENTS,
COUNTY AND MUNICIPAL AUTHORITIES
AND LEADING INDUSTRIAL CONCERNS

ASSOCIATE COMPANY: **DRAFTSELE (LONDON) LTD.,** 47 The Parade, Leamington Spa, Warwickshire. Phone: 1771

continued from page 202]

between the tubes and the Diffulite should not be less than 1 ft. 6 in. The angle of light cut-off is 45°.

Finish: Standard off-white or any of 14 standard colours.

Approximate cost: Nett ex works for quantities between 100 and 1,000 sq. ft. either off-white or one of 14 standard colours: Panels up to 4 ft. by 2 ft., 53s. 1½d./sq. yd. Larger panels, 41s. 7½d./sq. yd.

Above or below these quantities there will be a reduction or increase in cost respectively.

For special shapes there will be an increase of 50 per cent on the above prices.

TRANSLUCENT DIFFUSERS

Atlas Lighting Ltd.

Sylvalume (based on a system developed by Sylvania Electric Pro-



9. example of a Sylvalume ceiling.

ducts Inc. in the USA)

Material: Vinyl coloured diffusers or acoustic baffles, 9.

Size: 3 ft. by 3 ft.

Joint: A 3 ft. by 3 ft. grid of aluminium extrusions supports the vinyl pans, showing a projecting V cover strip which catches the light and reduces joint glare.

Weight: 1 lb./sq. ft. approx. (complete).

Light source: This system consists of an upper structure of primary and secondary wiring and control gear ducts with a flexible arrangement of fluorescent tube sockets, from which is suspended a secondary grid of extruded aluminium ceiling supports. Provided that the distance between the tubes and diffuser is not less than 1 ft. 3 in. the rows of tubes may be at 3 ft. centres.

For small areas or where the depth of void is between 1 ft. 6 in. and 2 ft., standard batten holders may be fitted direct to the parent structure (and wiring ducts omitted).

Finish: Vinyl diffusers (see illustration) - white, pink or blue. Acoustic baffles - white, black or red.

Approximate cost: Entire ceiling, including framework, diffuser panels, suspension and some baffles (excluding lighting system), is about 10s./sq. ft.

Courtney, Pope (Electrical) Ltd.

Glolite 1

Infill: 'Dogtooth' profile Fibreglass sheets.



10. Courtney, Pope's Glolite fittings. Top and lower left, details of Glolite 1. Bottom right, the same wiring duct supporting Glolite 2 infill panels.

Size: 2 ft. 10 in. by 3 ft.

Joint: 5 in. by 1½ in. by 16 gauge inverted m.s. wiring ducts, 10, at

2 ft. 11½ in. centres suspended on rod hangers and fitted with projecting studs to support the infill panels. The panels may be laid continuous or broken by cross channels or solid panels.

Weight: 2 lb./sq. ft.

Finish: White Fibreglass, and in colours at extra cost.

Approximate cost: 117s./sq. yd.

Glolite 2

Infill: Corrugated PVC.

Size: 3 ft. wide by required length.

Joint: 5 in. by 1½ in. by 16 gauge inverted m.s. wiring ducts at 3 ft. 1½ in. centre supported on rod hangers and fitted with ½ in. by ½ in. m.s. U channels each side to receive infill panels, 10. The panels may be laid continuous or broken by cross channels or solid panels.

Weight: 2 lb./sq. ft.

Finish: White PVC.

Approximate cost: 72s./sq. yd.

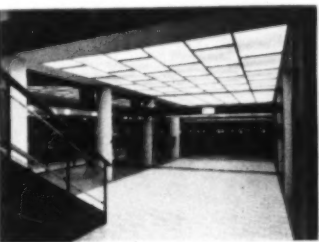
This firm also produce open 'egg-crate' louvres in metal with 2 in. by 2 in. by 1½ in., 2 in. by 2 in. by 2 in. and 3 in. by 3 in. by 3 in. sizes, and moulded white opal plastic louvres 12 in. by 12 in. with 1½ in. by 1½ in. cells 1 in. deep, all of which may be made up into any required size.

Crompton Parkinson Ltd.

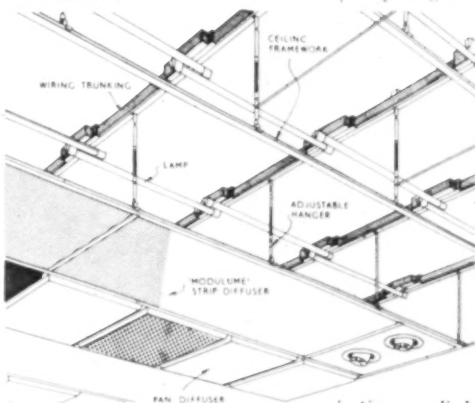
Modulume (based on a system developed by the Wakefield Company, Vermillion, Ohio, USA)

Material: PVC copolymer pans or corrugated vinyl sheet.

Size: Pans 3 ft. by 3 ft. Sheet 3 ft. by up to 30 ft. Expanded styrene panels 3 ft. square by ½ in. are also



11. example of Modulume ceiling at Coventry Civic Theatre.

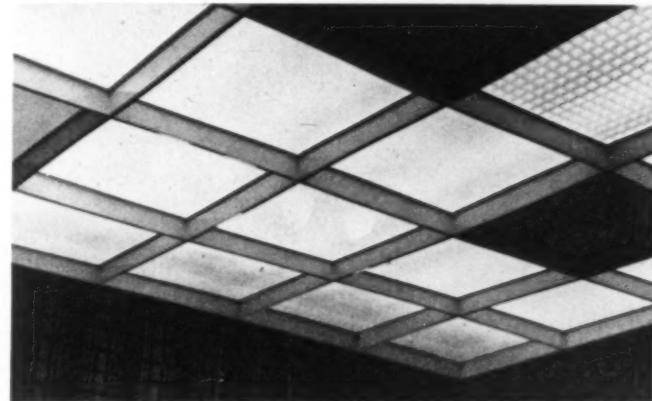


12. Modulume ceiling.

available for opaque sound-absorbent infilling. For setting out 2 in. must be added to the module dimension in both directions. Where the room size does not conform exactly, the ceiling may float free of the walls, or be furred out vertically to the ceiling or horizontally to the wall, 11 and 12. Joint: Fluted extruded aluminium H sections normally visible, but may be covered by a vertical clip-on sound absorption baffle. Visible cross Hs are used with pans only.

Weight: Pans and structure complete—1½ lb./sq. ft. Strip and structure complete—1½ lb./sq. ft.

Light source: Fluorescent tubes are fixed in continuous rows 3 ft. apart to wiring trunking, which in turn is fixed to the parent structure at approximately 15 ft. centres. The distance between the diffusers and tubes should not be less than 1 ft. 2 in. Finish: Pans are available in translucent white or strong colours with a non-reflective under surface and may be fitted to project upwards (i.e. coffered) or downwards. Corrugated



13. Ionlite ceiling.

vinyl strip is translucent white.

Approximate cost: Ceiling plus electrical equipment 15s. to 21s./sq. ft. (supply only and excluding wiring). Framework and diffusers account for 50 per cent of this price.

Sound absorption: Perforated metal fins in 3 ft. lengths and filled with Fibreglass may be clipped on to aluminium H sections in parallel lines or a complete rectangular grid.

Ionlite Ltd.

Ionlite suspended ceiling

Infill: Perspex (plain, moulded or with a regular design). PVC sheets with a regular design. Hardboard (plain or with perforations). Treetex sound-absorbent panels of various types, 13 and 14.

Size: 2 ft. by 2 ft. grid or 2 ft. by any length. (Other grid dimensions are possible.)

Joint: A pressed steel channel stove enamelled in any required colour can be suspended either way up to expose either projecting fins with dished buttons on every intersection, a deeply recessed joint with circular plates covering intersection, or, when this is fitted with a slide-in cover strip, a ceiling flush with the supporting grid. Cold cathode tubes are recommended.

Weight: No information supplied.

Light source: No special requirements. This ceiling may be, but is not necessarily, fully illuminated.

Finish: The variety of possible infill panels is quite familiar and no special properties are claimed.

Approximate cost: 6s. 6d./sq. ft. supply only, the suspension and grid, ex works. 10s./sq. ft. supply only, as above but with PVC diffusers.

Lumenated Ceilings Limited

Lumenated ceiling

Infill: Corrugated vinyl diffuser.

SKILL

Size: 3 ft. wide by a manageable length. Re-lamping and cleaning becomes difficult with very long sheets.

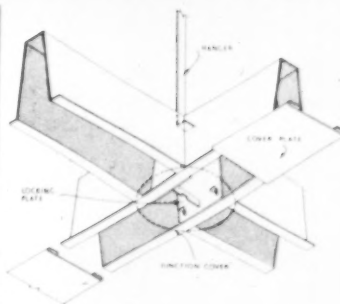
Joint: Extruded aluminium H section runners, showing a 1.80 in. cover strip, or designed to take a clip-on sound-absorbent fin. Hangers are required at from 6 ft. to 8 ft. centres.

Weight: No information supplied.

Light source: Not less than 8 in. from the diffuser, 15.

Finish: No information supplied.

Approximate cost: 9s./sq. ft., supply only.



14. construction of Ionlite ceiling showing inverted wiring channels.

Lumenator Module

Material: Vacuum-formed vinyl or acrylic pans, 15.

Size: 2 ft. by 2 ft. trays or 2 ft. wide diffusers.

Joint: Visible V-shaped extruded aluminium track which is highlighted and therefore not obvious, 16.

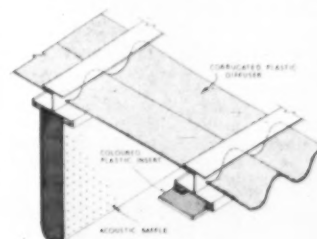
Hangers are at 6 ft. to 8 ft. by 2 ft. centres.

Weight: 6 oz./sq. ft. complete with suspension.

Light source: Fluorescent tubes should be more than 8 in. from the trays, and in any case this distance should be related to the distance between tubes by the ratio 1 : 1½.

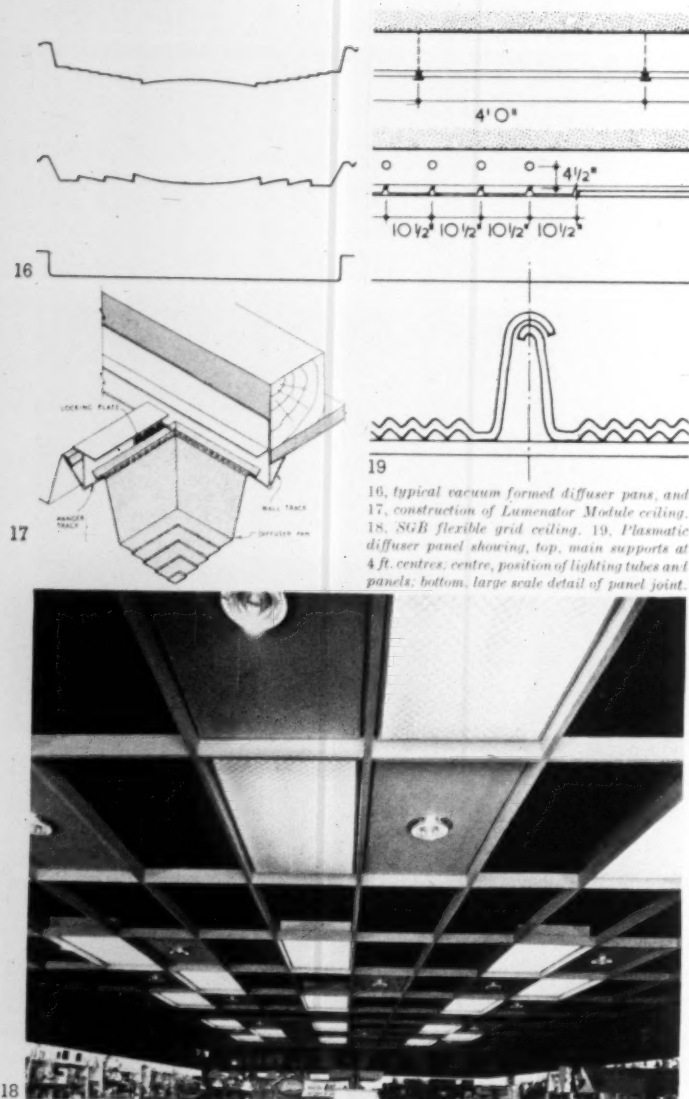
Finish: There are three standard pans—plain or moulded in concentric squares (see illustration). Specials to order.

Approximate cost: 9s./sq. ft. (supply only).



15. construction of Lumenated ceiling.

SKILL



16, typical vacuum formed diffuser pans, and 17, construction of Lumenator Module ceiling. 18, SGB flexible grid ceiling. 19, Plasmatic diffuser panel showing, top, main supports at 4 ft. centres; centre, position of lighting tubes and panels; bottom, large scale detail of panel joint.

Scaffolding (Great Britain) Ltd.
—Metal Lathing Division, with lighting by Courtney, Pope (Electrical) Ltd.

SGB Flexible Grid ceiling
Infill: Solid panels with recessed tungsten fittings or plastic or metal louvred fluorescent fittings to fit the grid, 17.

Size: Standard grid sizes are 2 ft. 3 in. by 2 ft. 3 in., 4 ft. 3 in. by 4 ft. 3 in. or 6 ft. by 3 ft.

Joint: A grid of 4 in. by 2½ in. by 1½ in. by 14 gauge galvanized pressed mild steel conduit channel is suspended from the parent structure, showing a projecting fin.

Weight: Varies as the ceiling is often arranged with only 50 per cent infilling (2 to 5 lb./sq. ft.).

Light source: The fittings are built into the panel infillings.

Finish: The grid is normally light in colour and since the light fittings do not rely on structural ceiling reflection, both ceiling and hangers are obscured by dark decoration if some panels are omitted.

Approximate cost: Supply and fix a grid ceiling based on a module of 6 ft. by 3 ft.—66s. 6d./sq. yd. Supply and fix a grid ceiling based on a module of 2 ft. by 2 ft.—102s./sq. yd. Other grid sizes pro rata.

Tube Lamination & Engineering Ltd.

Plasmatic diffuser panels
Material: Anti-static treated poly-

styrene extrusion with small corrugations.

Size: 10½ in. by up to 4 ft. (2 ft. and 4 ft. lengths standard), 19.

Joint: Deeply recessed V (lapped).

Weight: 10 oz./sq. ft.

Light source: Independent fluorescent tubes 4½ in. above joints (10½ in. centres).

Finish: Clear or translucent opal.

Approximate cost: 50s./sq. yd.

If the panels are over 4 ft. wide then intermediate extruded polystyrene translucent supporting Ts will be required, but they are normally intended to span between the extruded aluminium sections of standard suspended ceilings. The manufacturers claim that the material has been tested to the equivalent of 7,200 hours brilliant sunshine without yellowing.

Electrically heated ceilings

Only two electrically heated ceilings have come to hand at the time when this article was compiled, and both of these are adaptations of non-heated ceilings. The first, the Burgess system, consists of heating cables laid over the firm's standard metal tiles and backed with an insulating quilt. The second, the Heatacoust by Petradene Ltd., is a prefabricated plaster ceiling, and involves the bedding of the heated element in the plaster tile which is

identical in appearance (when seen from below) to the same firm's standard Supacoust tile. The latter is one of the few heated ceilings which have been designed in this country, and has a logic and tidiness about it which has great appeal.

Burgess Products Company Ltd.

Electrically Heated, Acoustic Tile Ceiling

The metal pan tiles and spring steel Ts are identical to those described in the previous article, but mineral insulated electric cables are fixed to the general suspension and can be connected to the normal power circuit with a thermostatic control which gives a quick response. The usual sound absorbent blanket is unrolled over chicken wire above the electric cables to provide thermal insulation, 20.



20, wiring circuit of Burgess electrically heated ceiling.

Wattage is 20 watts per sq. ft. (average).

The surface temperature of the tiles is 90° to 100° F.

The temperature of the cable is 180° to 200° F and that of the void between tiles and blanket is 140° to 150° F. This gives a room temperature of from 60° to 65° F.

Approximate cost: 75s. to 100s. sq. yd. supplied and fixed.

Petradene Ltd.

Heatacoust

These tiles are identical in appearance to the Plaster of Paris 'Supercoust' tiles described in the previous article, but a cupro-nickel wire wound around a silken core and insulated with PVC is embedded in the tiles between each row of perforations. This continuous heating wire terminates at a plug in the centre of the tile (with removable brass prongs for packing) so that a junction box (with socketed leads) fitted to the structural slab above can neatly serve groups of up to four tiles without demanding any precision in initial electrical work, 21.

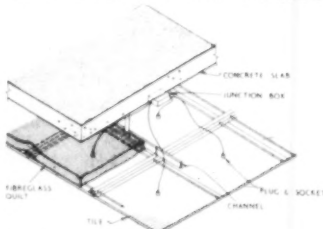
The system operates on an air temperature of approximately 55° F and the manufacturers recommend one-third Heatacoust and two-thirds Supacoust.

Size of tiles: 2 ft. by 2 ft. or 1 ft. 8 in. by 1 ft. 8 in. (specials to order).

Watts: 60, 75 or 100 per tile.

Surface temperature: 105° to 110° F.

Approximate cost: Based on an area of 1,000 sq. yds. and assuming one-third Heatacoust and two-thirds



21, Heatacoust heating by Petradene.

Supacoust the cost for supplying and fixing would be approximately 63s./sq. yd.

Water-heated ceilings

By comparison with the electrical heating systems these seem rather clumsy, but while the capital costs are evidently higher they are no doubt cheaper to run at present, even if there is the need for fuel storage and stoking. Looking ahead, however, one always hopes that electricity will get cheaper, and certainly one cannot foresee any similar hopes for solid fuel.

In all three systems it is important to have a really good contact between the tiles and the heating coils so that the heat is conducted to the radiating surfaces.

The Frenger ceiling would seem to be the most straightforward, and has certainly been widely used. More light fittings manufacturers claim to make modular fittings suitable for this type of ceiling than any other.

Despite the co-operation of three firms, the Stramax ceiling can wind up with three separate suspension systems, which surely seems rather excessive.

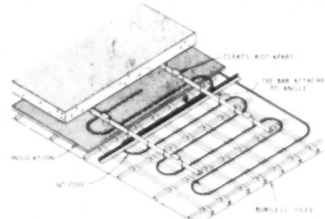
In the Burgess Sulzer ceiling, the spring T bars which hold the tiles are not connected to the heating coils but must be held firmly against them, and this would seem to call for considerable precision.

The prices quoted do not include electrical installation, light fittings or connecting up to the heating system.

Burgess Products Ltd.

Burgess-Sulzer Heated Acoustic Ceiling

The Burgess metal pans and fixing Ts are identical to those described in the previous article, but the Ts are supported by cleats to M.S. angles which are suspended from the parent structure. Hooked rod hangers from the M.S. angles support sinuous heating tubes at 6 in. centres which



22, Burgess-Sulzer heated acoustic ceiling.

must be in contact with the Burgess spring steel T bars. A sound absorbent and heat insulating blanket is laid over the heating coils, 22. Three light fitting manufacturers can supply module fittings specifically adapted for this ceiling. Hopes Heating and Engineering Ltd. are one firm of heating contractor who will supply and fix this ceiling.

Approximate cost: 110s./sq. yd. supplied and fixed.

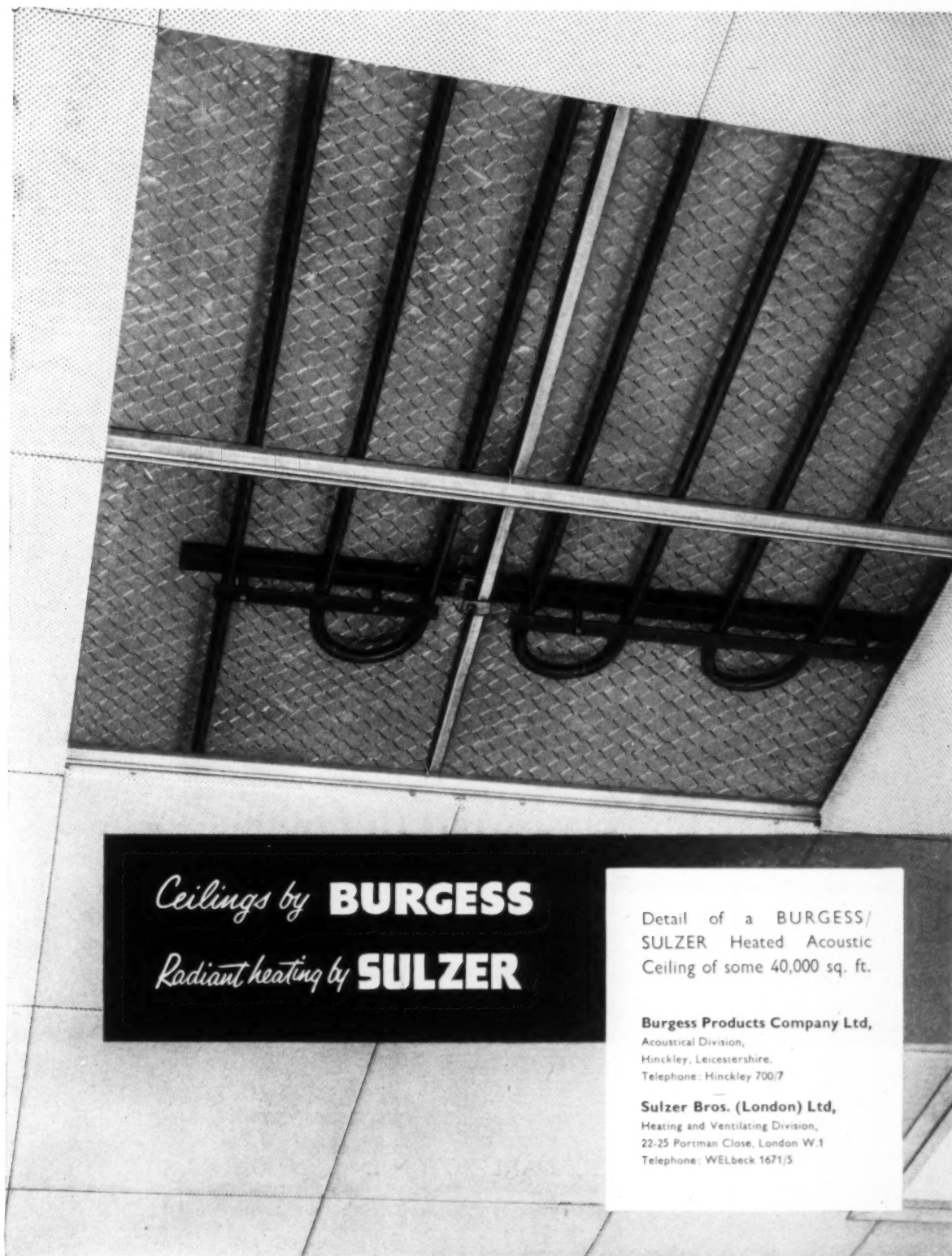
Frenger Ceilings Ltd.

Frenger Suspended Heated and Acoustic Ceiling

Although this ceiling may be used without heating (i.e. the heating coils left dry) it is essentially a heated ceiling system.

½ in. M.S. rod hangers (at approximately 4 ft. centres) hang from a radial fixing box to take up tolerances. On the hangers are suspended 1 in. by 1½ in. by 18 SWG channels which are welded

[continued on page 206]

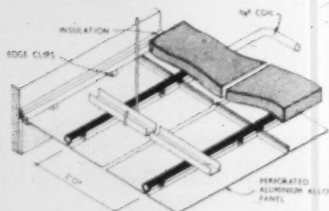


Ceilings by **BURGESS**
Radiant heating by **SULZER**

Detail of a BURGESS/
SULZER Heated Acoustic
Ceiling of some 40,000 sq. ft.

Burgess Products Company Ltd,
Acoustical Division,
Hinckley, Leicestershire.
Telephone: Hinckley 700/7

Sulzer Bros. (London) Ltd,
Heating and Ventilating Division,
22-25 Portman Close, London W.1
Telephone: WELbeck 1671/5



23. Frenger suspended heated ceiling.

to the $\frac{1}{2}$ in. O.D. sinuous heating coils (at 2 ft. 0 $\frac{1}{2}$ in. centres), 2 ft. by 2 ft. nominal pressed aluminium Pyluminized plain or perforated pans are shaped on two parallel edges to fit around the heating coil tubes and held firmly in position by spring steel clips, 23. These flanges being in direct contact with the tubes act as radiators. Bitumen bonded fibreglass $1\frac{1}{2}$ in. thick, faced with staple tissue on the underside, is laid in strips over the coils, and apart from heat insulation this gives a reverberation absorption coefficient which is highest in the middle range of frequencies (i.e. 0.70 at 500 c/s.).

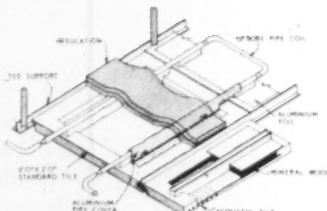
The panels are normally painted with flat oil paint after erection, and some eleven light fitting manufacturers produce module fittings specially adapted for use with this particular system.

Thermal capacity: Extremely low at about 0.45 BTU's per sq. ft.

Approximate cost: 81s./sq. yd. supplied and fixed would be a typical price for a well insulated building in the London area. (This is based on a ceiling of 4,500 sq. ft.)

Stramax Ceilings (GB) Ltd., Clark and Fenn Ltd., and AEI Lamp and Lighting Company, Ltd.

Stramax Heated Ceiling (developed



24. Stramax heated ceiling.

by Stra-Max International Research and Development Centre, Zurich).

Stramax $\frac{1}{2}$ in. I.D. pipe coils are suspended by rustless hangers (which need not be permanent) from the parent structure, and a separate system of secretly suspended steel Ts support the 2 ft. by 2 ft. demountable Clark and Fenn gypsum plaster ceiling tiles (see previous article) which for the heated part of the ceiling are fitted with an aluminium alloy cradle which must touch the heating pipes and be attached to them by a slotted saddle clip, 24. A mineral wool blanket insulation is placed over the heating coils and separate sound absorbent pads are fitted in perforated tiles. The AEI Lamp and Lighting Company can supply module fittings specially adapted for this ceiling and independently suspended.

Weight (without light fittings) approx. 6 lb. per sq. ft.

With a mean water temperature of 150° F and a ceiling surface temperature of 100° F the room temperature will be 65° F.

Approximate cost: 90s. to 108s./sq. yd. average (supplied and fixed). Large well insulated areas 81s./sq. yd. Small poorly insulated areas in a remote district might run to 135s./sq. yd.

THE INDUSTRY

Bath Production

Bilston Foundries Ltd., the makers of the *Atlanta* bath, have overflowing order books. Seeing that present production methods were unable to meet demand, the company decided to install completely new plant in new premises. The most startling change accomplished was that the number of man-hours per bath dropped by as much as 75 per cent. The fully mechanized plant produces one bath every working minute and so far as is known it is the only one which has been built from scratch for the sole purpose of producing baths. The intention is to increase production of the *Atlanta* bath in all sizes, 54 in., 60 in., 61 in. (available in two widths), 66 in. and 72 in. lengths. In the future new designs will be produced in response to demand.

Bilston Foundries Ltd., Highfields, Staffs.

Window Catalogue

James Gibbons Ltd. have issued a new window catalogue which deserves attention. It is divided into parts, each of which has an ingenious method of referencing so that windows incorporating various metal sections may be appreciated without constant page turning. One part is devoted to double glazing units, and there is also a section describing the *Windocall* system of curtain walling. The whole catalogue is bound so that it lies flat on a desk or drawing board, and generally should be found useful. *James Gibbons Ltd., 74 Southampton Row, W.C.1.*

Guidance on Slates

Redland Stonewold Interlocking slates have been available for some time, and are becoming increasingly popular. Our attention has been drawn to a new brochure illustrating these slates. The point of interest is the low roof pitch. In the past they have been used successfully at 20 degrees, but the makers cannot undertake to guarantee them as waterproof at this pitch, though they are prepared to do so at 22 $\frac{1}{2}$ degrees, provided that the supporting roof structure conforms to their specification. The cost of natural slate being so high relative to other materials, Redland slates offer a very welcome alternative. The brochure gives technical information in a clear and readable manner together with drawings of a complete suggested roof system. The interlocking slates are available in three colourings, Lichen Green, Moorland Stone, and Slate Grey, and the weight per square is approximately 9 $\frac{1}{2}$ cwt. The size of each slate is 17 in. by 15 in., minimum headlap being 3 in. Another Redland product recently introduced to the market is the Redland 52 English Pantile, which, like all Redland products, is guaranteed for 50 years. A brochure illustrating this product has also recently been issued. The tiles are available in eight colours. *Redland Tiles Ltd., Castle Gate, Reigate, Surrey.*

School Light Fitting

A difficulty about choosing light fittings for schools is that the more

[continued on page 208



THE DARLINGTON INSULATION CO. LTD.

specialise in: **SUSPENDED DECORATIVE & ACOUSTIC CEILINGS**

ARCHITECTURAL ACOUSTICS, SOUND ABSORBING DEVICES

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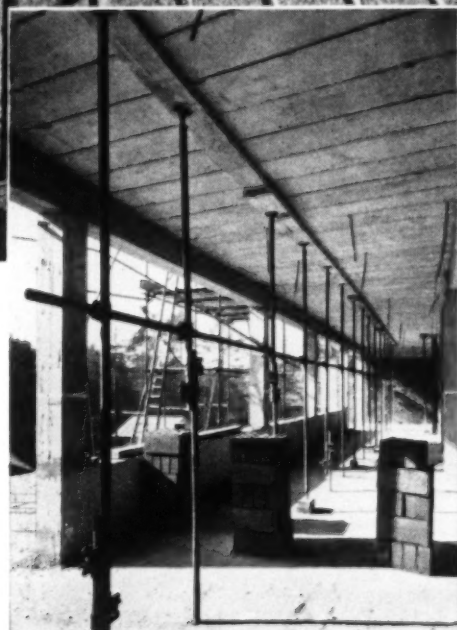
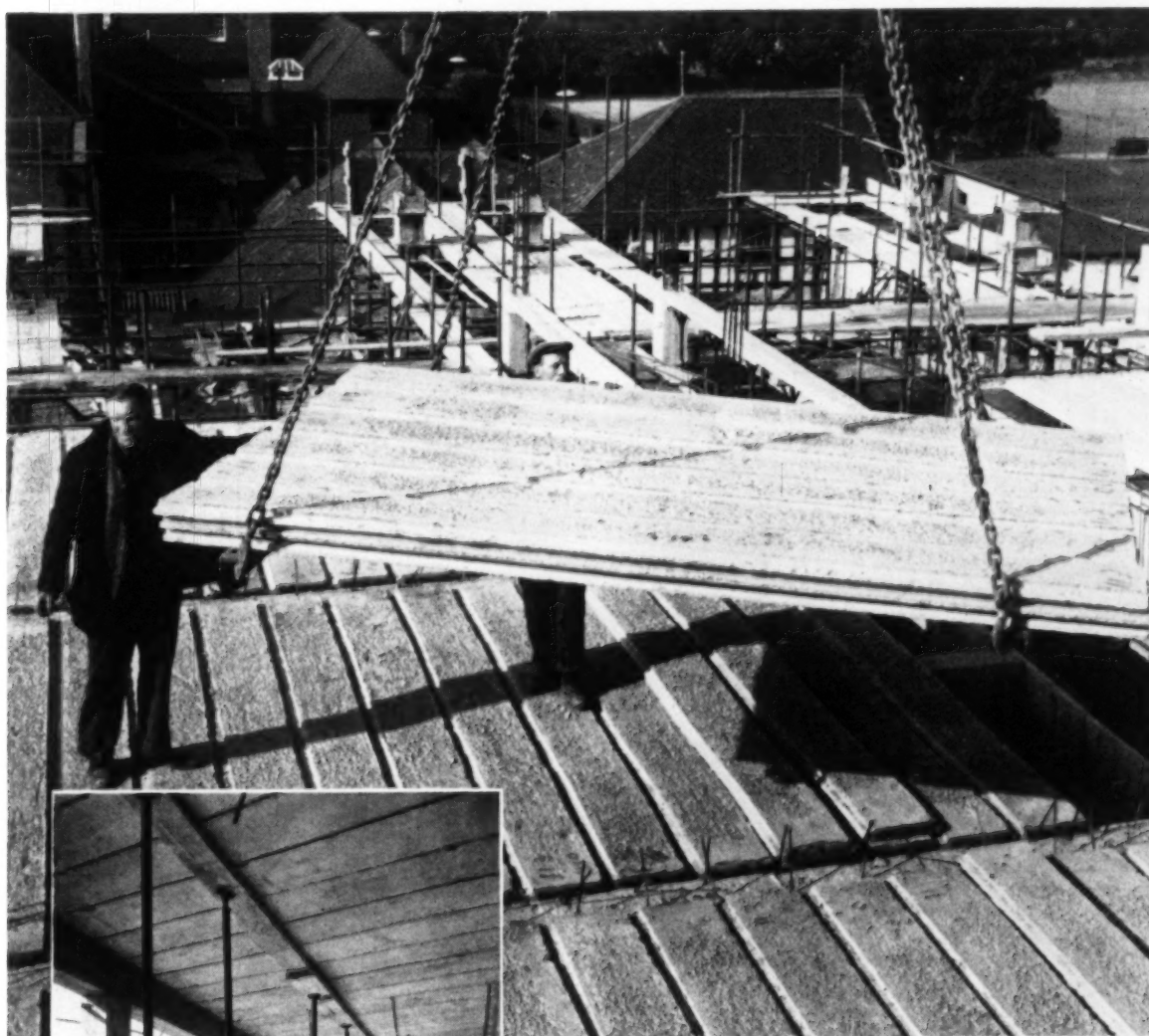
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CONTRACTORS FOR THE CELOTEX SYSTEMS



**New office building at Kingswood, Surrey, for
The Legal & General Assurance Society Ltd.**

Architect: Ronald Fielding, A.R.I.B.A.
Consulting Engineers: W. S. Atkins & Partners
Building Contractors: Richard Costain Ltd.

Approximately 10,000 yards of BISON Plank
Flooring and Roofing (delivered only) incorporated
in Consulting Engineers' frame Design. 25 yds. of
Plank were raised at each hoist direct from lorry.



SPEED & STRENGTH

BISON floors, beams and concrete frame structures

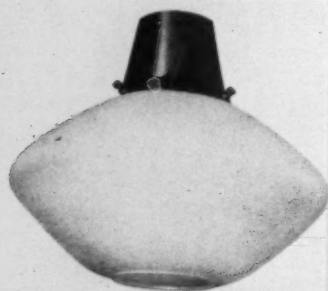
CONCRETE LIMITED are the largest structural precast concrete manufacturers in the world

CONCRETE LIMITED Green Lane, Hounslow, Middlesex *Hounslow 2323* and Dovehouse Fields, Lichfield, Staffs. *Lichfield 3555*
London Sales Office: 16 Northumberland Avenue, W.C.2 *Whitehall 5504*
CONCRETE (NORTHERN) LIMITED Stourton, Leeds 10 *Leeds 75421* Manchester Office: 40 King Street West, Manchester 3 *Blackfriars 5676*
CONCRETE (SCOTLAND) LIMITED Elmbank Street, Glasgow C.2 *City 3292*

CON. 109a

continued from page 206]

pleasant ones tend to be too expensive. A useful addition to the range of choice is Siemens Edison Swan Ltd.'s 'school fitting.' An opal glass bowl is held by three knurled head



1, Siemens Edison Swan opal glass light bowl.

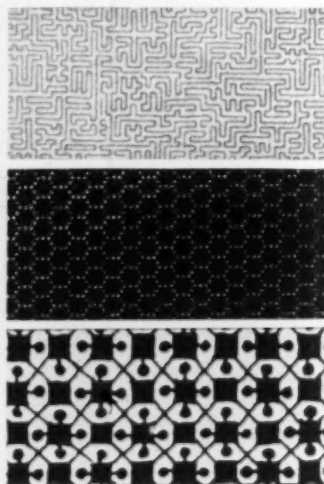
screws to an aluminium gallery, which may be fixed to the ceiling or suspended. The glass bowl has a generous hand hole which makes lamp replacement easier, and hence increases the chance of actually getting defective bulbs replaced by caretakers—a practical point which can save much annoyance. Prices are not unreasonable and the fitting is available in 200 watt and 150 watt sizes. Clearly its use is not limited to schools and it is to be hoped that, though not spectacular, it may sometimes be used to replace the globe which hovers so ubiquitously in offices and schools.

Siemens Edison Swan Ltd., 155 Charing Cross Road, London, W.C.2.

More Small Patterns in Melamine

Last month we welcomed a new

range of melamine sheet using very small-scale patterns, as this seemed to us the right way to use this smooth, hard—and quite unprecedented—material. Now another small-scale pattern range has come in, 'chosen in collaboration with' Ward and Austin



2, three examples of melamine sheets with small scale patterns.

(a firm of architects who have often contributed articles to the AR). This is the new Decorplast range, marketed by Holoplast Ltd. It consists of 47 new colours and patterns and these are to be joined (and, by the time you read this, will have been joined) by seven photographic wood veneers. Three of the patterns we illustrate, to full size, above. It will readily be seen that patterns with

this degree of delicacy require that the architect should show a corresponding delicacy in his detailing. The days of the clumsy cover-strip ought to be over.

Holoplast Ltd., 116 Victoria Street, S.W.1.

Dohm Decor

A new and interesting material for achieving brilliant colour externally has just been marketed, known as Dohm Decor. It is a finish which can be sprayed on to a prepared surface of concrete, brickwork, render, wood, etc., and produce a permanent decorative and waterproof coating. It is inexpensive when compared with natural facing materials (exclusive of labour, the cost is between 3s. and 4s. 6d. per square yard) and it may also be glazed. Basically it is conceived as a decorative protective finish which may be applied to most building materials. The colour is good. The finished surface is granular, and may be cleaned down by normal methods. It would appear to be a useful addition to the range of internal and external colour finishes, and might be employed very successfully on old and new work alike. Time will expose any weaknesses, but in the meanwhile it has the great advantage of being easy to handle. Normal spraying techniques are used and no special equipment is required.

Dohm Ltd., 167 Victoria Street, London, S.W.1.

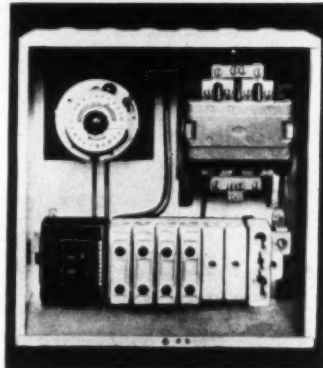
Consumers Control Unit for Underfloor Heating

It is a sign of the times that underfloor heating by electric off-peak load is sufficiently common for the manufacturers of equipment to produce

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3



4

3 and 4, consumer control unit for heating circuit.

[continued on page 210]



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continued from page 208]

off-peak switching. As you can see, the unit is neat; it is also small, being only 12 in. by 12 in. by 5 in. It is cased in sheet steel and the cover is sealable.
Midland Electric Manufacturing Co. Ltd., Reddings Lane, Tyseley, Birmingham.

CONTRACTORS etc

Offices at Birmingham. Architect: Erno Goldfinger. Assistant Architect: John Duncan. Quantity Surveyor: Davis, Bellfield & Everest. Engineer: Dr. K. Hajnal Konyi. General Contractor: C. Bryant & Son. Soil exploration: Ground Explorations Ltd. Piling: Cementation Co. Stahlton floors: Costain Concrete Co. Precast concrete: Liverpool Artificial Stone Co. Asphalt tanking and roofing: Neuchatel Asphalte Co. Thermoplastic floor: Neuchatel Asphalte Co. Marble floors: Anselm Odling & Sons. Suspended ceilings: Clark & Fenn Ltd. Partitioning: The Morris Singer Co. Thermal insulation in ducts: Celcon Ltd. Metal windows: Williams & Williams Ltd. Glazing: Aygee Ltd. Armourplate doors and plate glass: James Clark & Eaton Ltd. Metalwork: Wessex Guild Ltd. Ironmongery: J. D. Beardmore & Co. Paint: T. & W. Farniloe Ltd. Services: Heating and hot water: Etna Lighting & Heating Co. Radiators: Copperad Ltd. Ventilation: Hopes Heating & Engineering Ltd. Electrical and electrical floor warming: L. H. Banks. Sanitary fittings: Stitsons Sanitary Fittings Ltd. Lifts: Bennie Lifts Ltd. Furniture: Hampton & Sons Ltd.

Nottingham University, Portland Building. Contractors on the section

designed by John Wright, F.R.I.B.A., as follows: Main contractor: Trollope & Sons (London) Ltd. Carpets: I. and C. Steele Ltd. Wallpapers: Cole & Sons Ltd. Chairs: L.M. Furniture Ltd. Curtain fabrics: Edinburgh Weavers Ltd. Fibrous plaster: F. Dejong & Co. Light fittings: General Electric Co.

Nottingham University, Fine Art Wing. Architect: H. T. Cadbury-Brown, F.R.I.B.A. General contractor: John Laing & Son. Acoustic ceiling tiles: Tentest Fibre Board Co. Spot light fittings and plastic egg-crate ceiling: Harris & Sheldon Ltd. Colour-matching fluorescent light tubes: General Electric Co. Standard light fittings: Merchant Adventurers Ltd.; Geo. Forrest & Son. Metal shelves and gallery: Sankey-Sheldon Ltd. Gallery brackets and balustrade, circular stairs, aluminium picture rails: G. Johnson Bros. Ltd. Fabric wall covering (Canotex): Arthur Sanderson & Sons. Carpets: Hampton & Sons Ltd. Wallpaper: Primavera Ltd. Tables, desks, cupboards, settees (designed by the architect): Trevor, Page & Co. Fibreglass chairs: Aidron Duckworth. Upholstered chairs: Hille of London Ltd. Door furniture: W. J. Binns Ltd.

Offices at Davies Street, W.I. Architects: J. M. Austin-Smith & Partners. Main contractor: Holloway Bros. Ltd. Sub-contractors: Venetian blinds: Horsley Smith & Co. Electrical work: Buchanan & Curwen Ltd. Suspended ceiling: John Dale Ltd. Iron staircase: H. & C. Davis & Co. Ironmongery: G. & S. Allgood. Fireproof door: Dreadnought Fireproof Doors. Flooring: Inlaid Rubolin. Door handles: Comyn Ching & Co. Carpets and curtain fabrics: Heal & Son. Light fittings: Fluoresol Ltd. Furniture: Libertys. Special typists' chairs: Office Machinery Ltd.

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Theological College in London. Architects: Yorke, Rosenberg and Mardall. General contractors: Bovis Ltd. Sub-contractors: Ironmongery: H. & C. Davis. Electrical work: B. French Ltd. Tiling and tile mural: Carter (London) Ltd. Terrazzo: Zanelli (London) Ltd. Steel windows: Aygee Ltd. Metal work: Wessex Guild Ltd. Sanitary fittings: Stitson's Sanitary Fittings Ltd. Block and strip flooring: Hollis Bros. Ltd. Cork floors: Jos. F. Ebner (1953) Ltd. Roofing: William Briggs & Sons Ltd. Fire protection: Associated Fire Alarms Ltd.; Read & Campbell Ltd. Flush doors: Gliksten Doors Ltd. Roller shutters: Haskins Ltd. Light steel trusses: R. Smith (Horley) Ltd. Heating, ventilation and plumbing: R. J. Audrey Ltd. Duct covers: Broads Manufacturing Co. Portland stone: South Western Stone Co. Lift: Keighly Lifts Ltd. Curtains: Heal's Contracts Ltd. Furniture: Stafford Furniture Ltd.; Russell Furniture Ltd.; Hille of London Ltd. Purpose-made furniture: Lord Roberts Workshops; H. Ventress. Light fittings:

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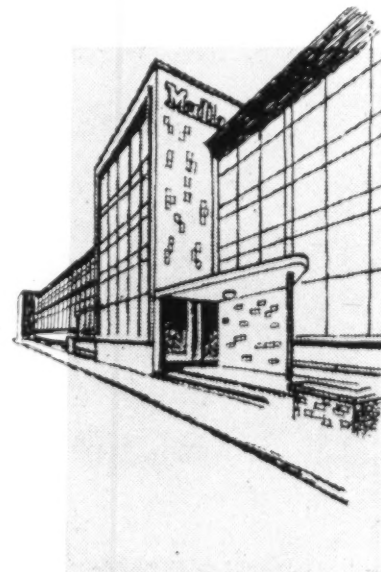
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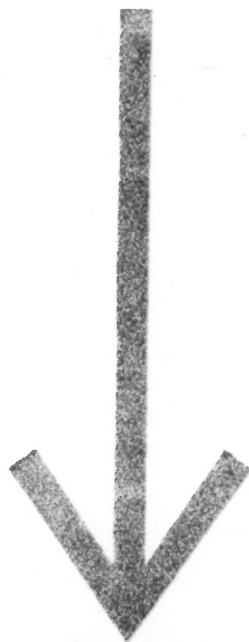
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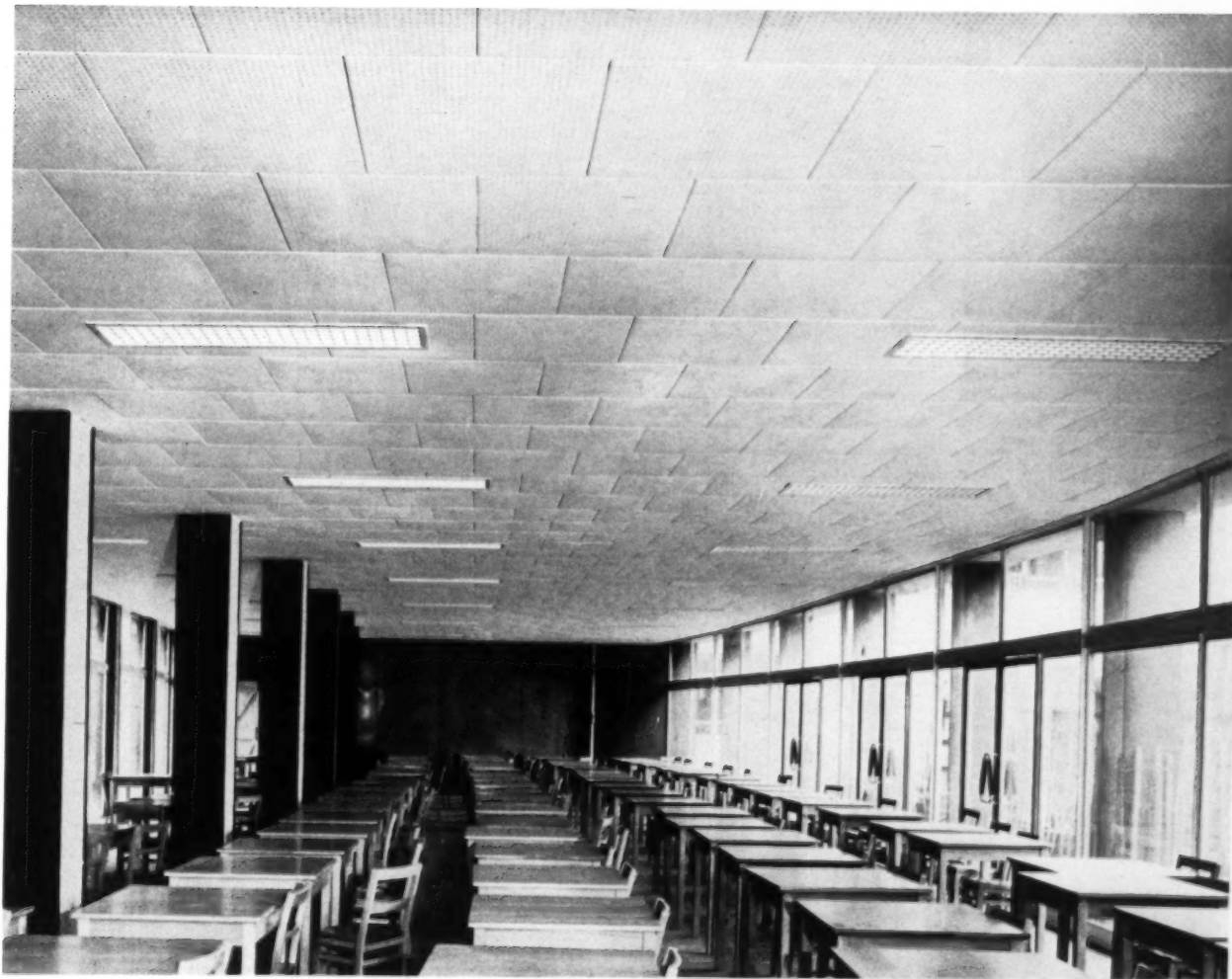
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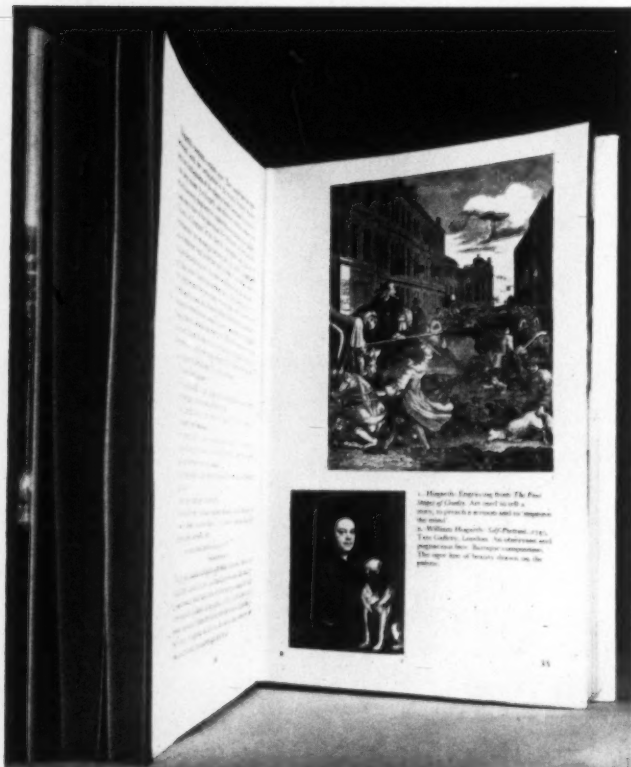
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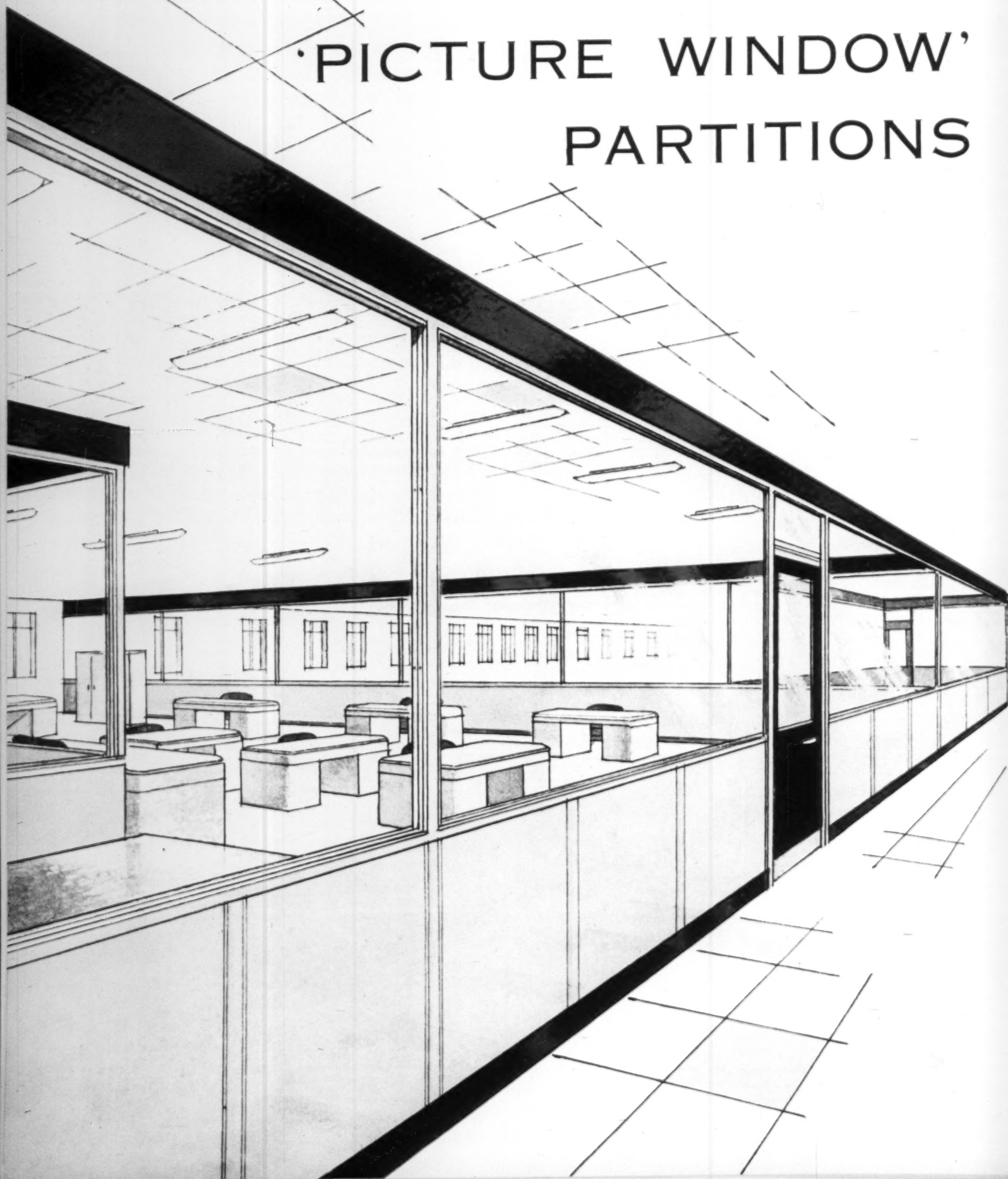
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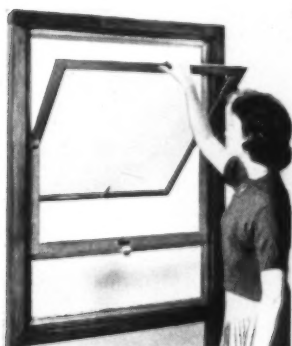
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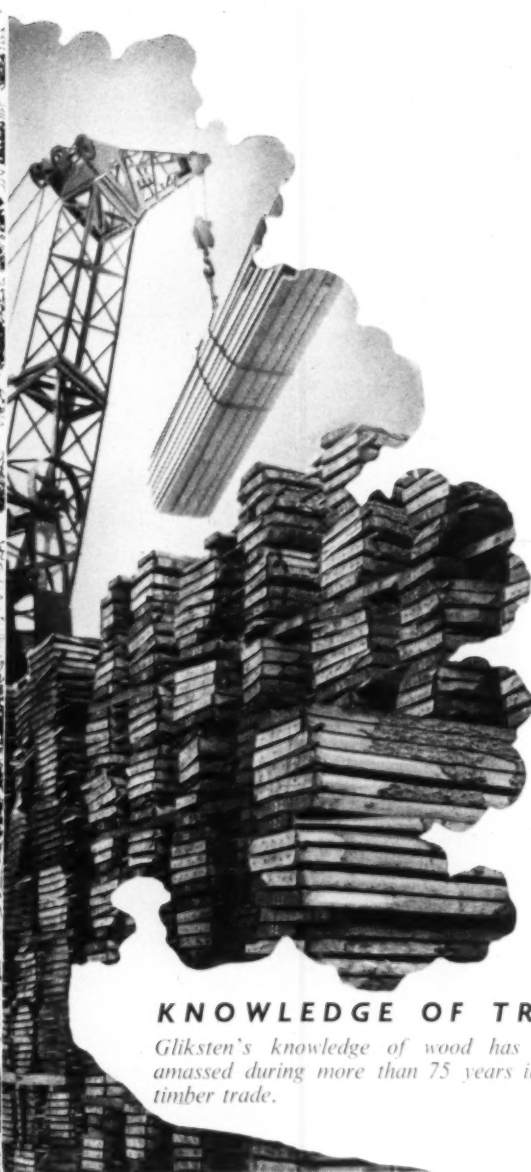
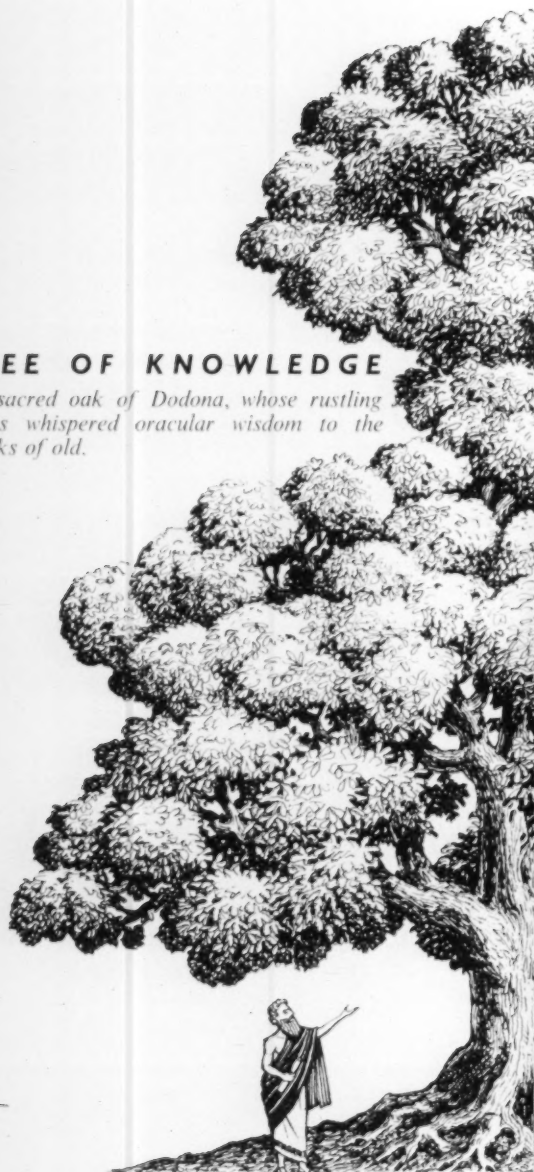
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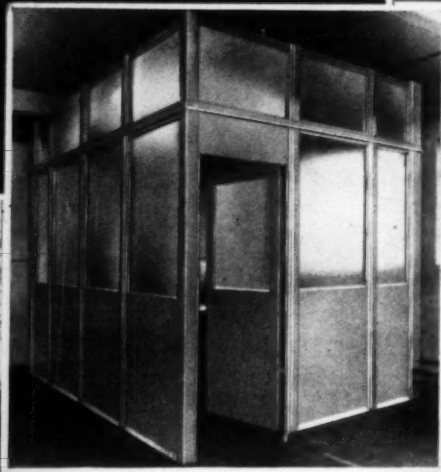
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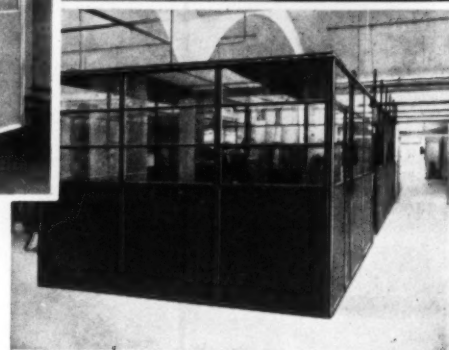
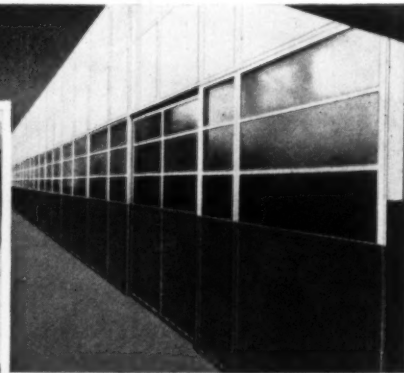


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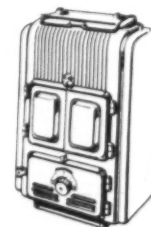


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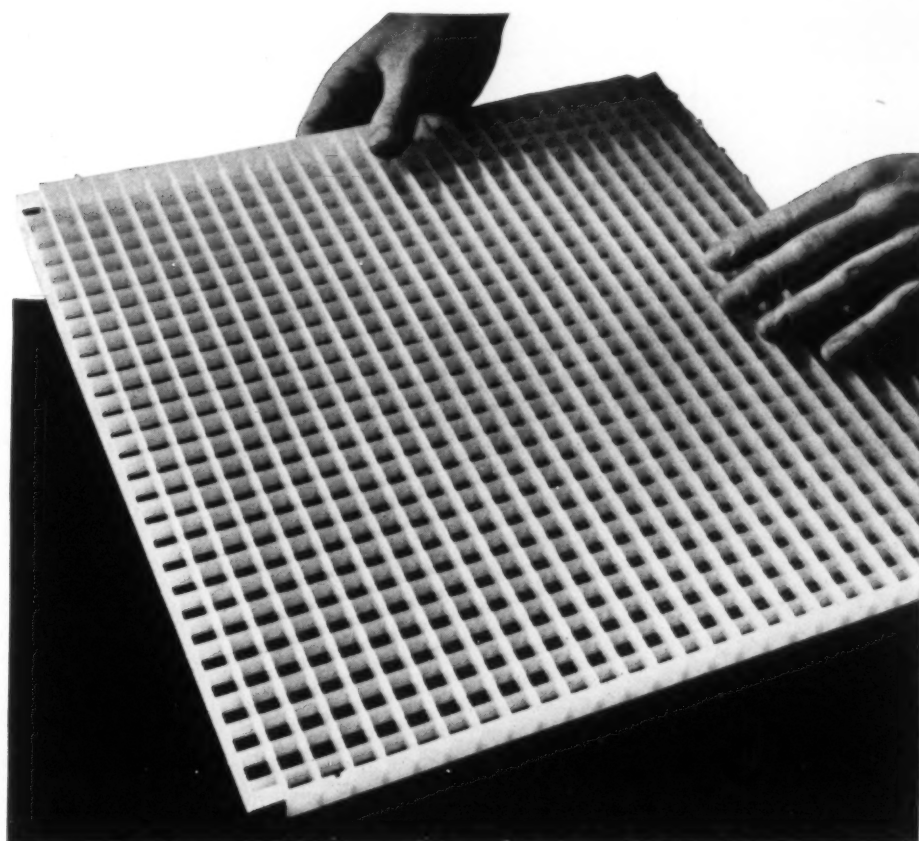
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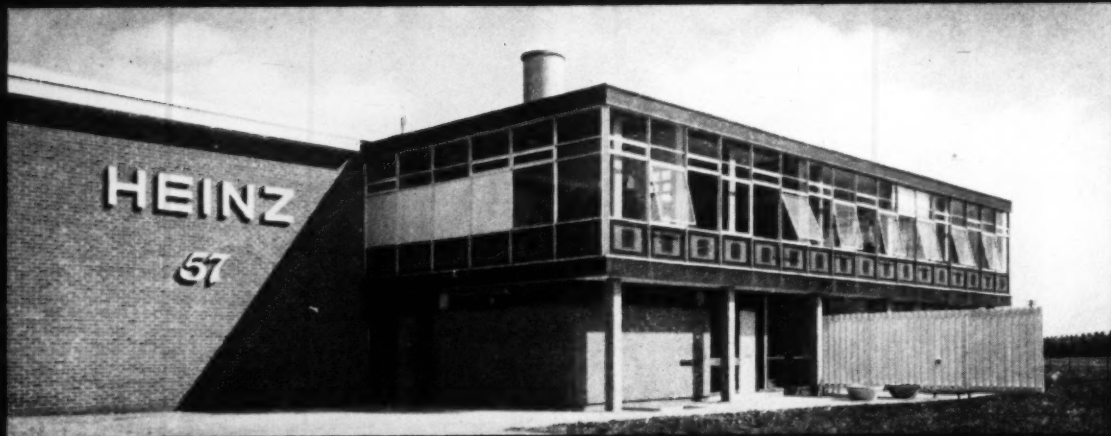
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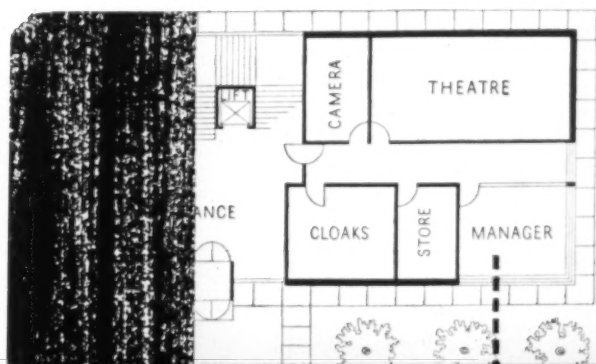
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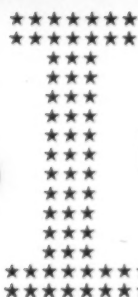
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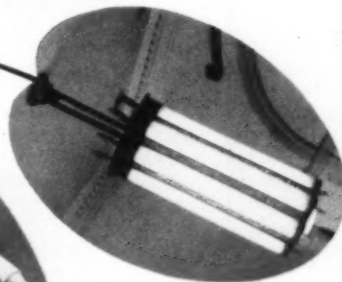
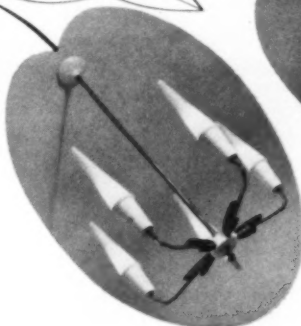
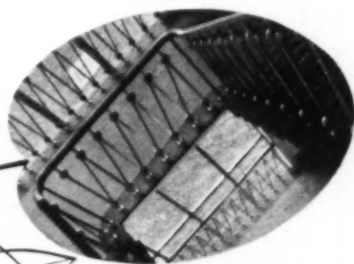
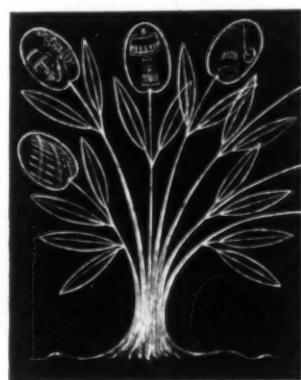


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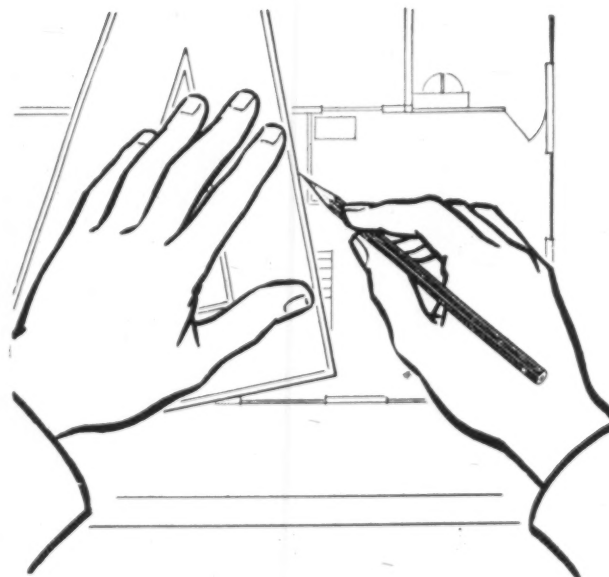
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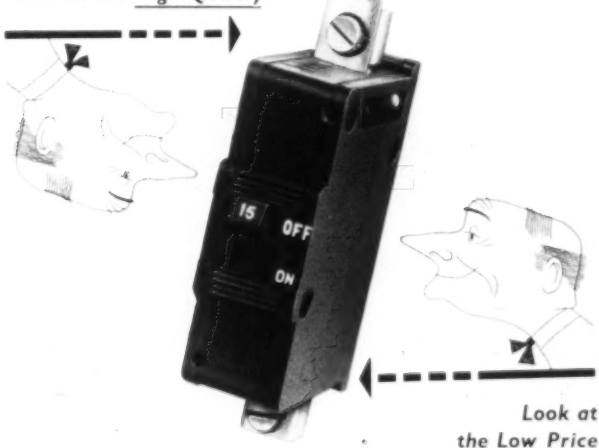
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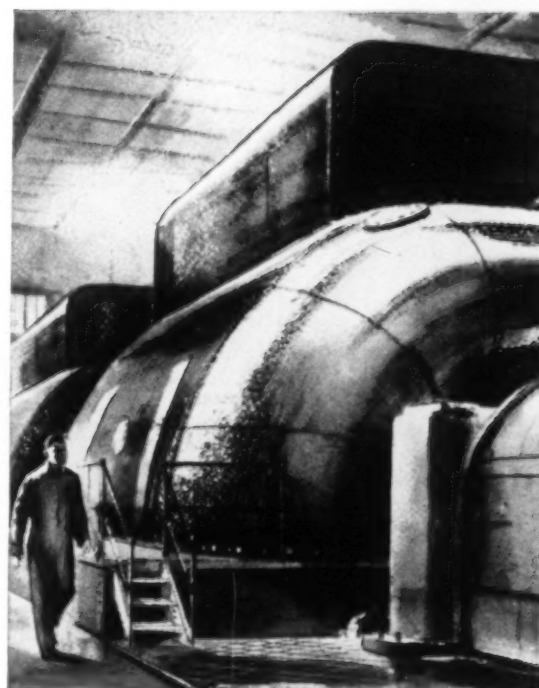
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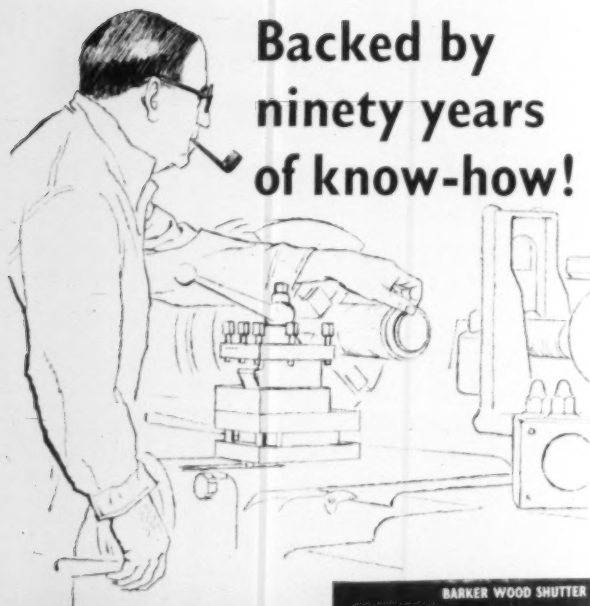
million kilowatts of nuclear-generated electric power will be available.

Though these projects will not be completed for some time, the Central Electricity Generating Board plays an important part in today's fight against inflation. Power stations are being built at a cost no greater than in 1948—£50 per kilowatt installed. And, although the output of the industry has doubled since 1948, the increase in manpower is only about one-third.

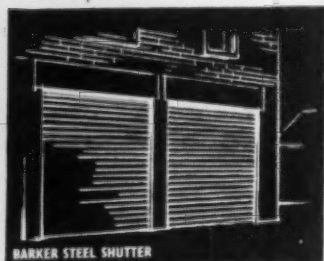
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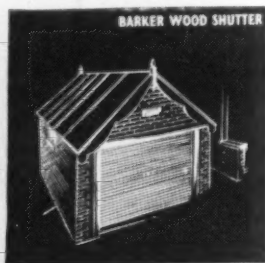
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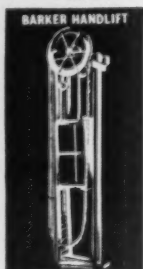
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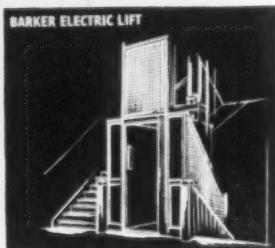
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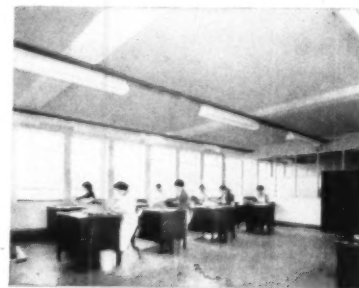
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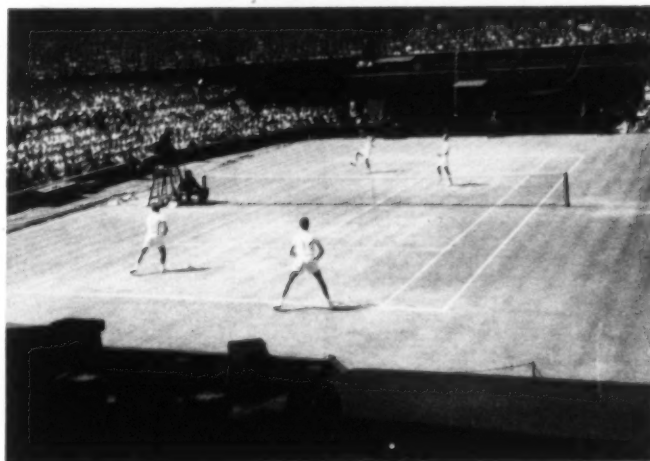
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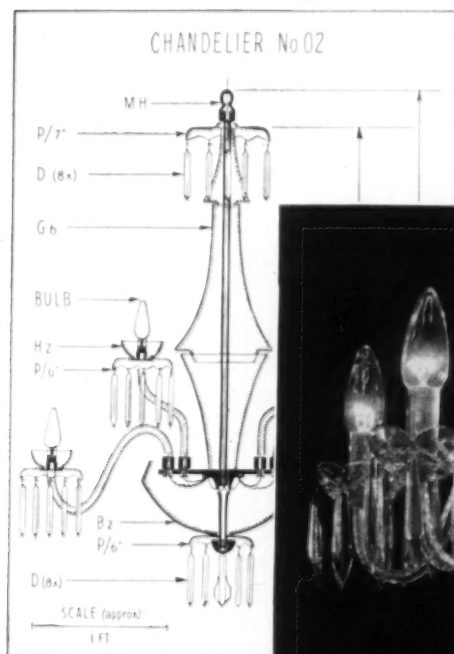


Final of a Doubles Championship at Wimbledon

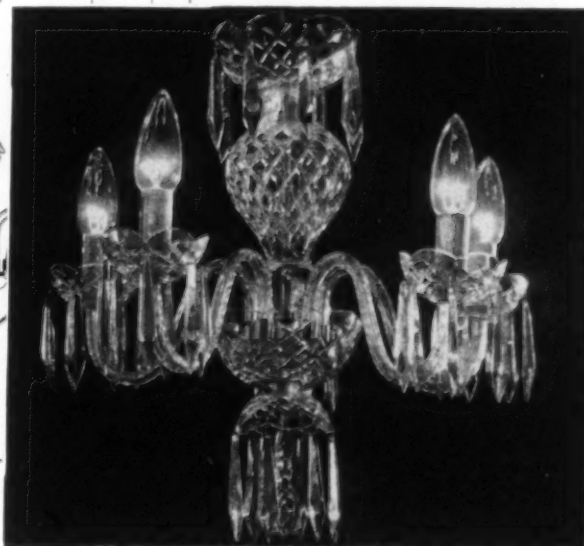
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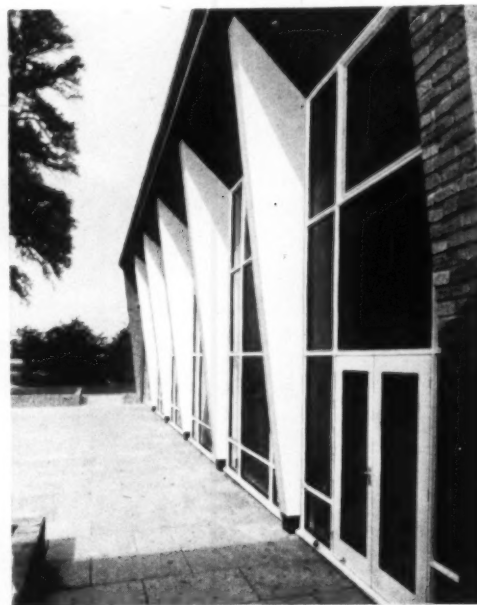
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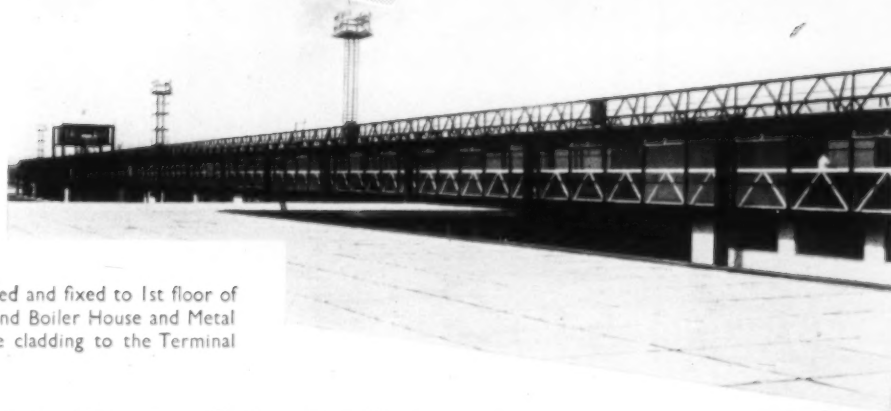
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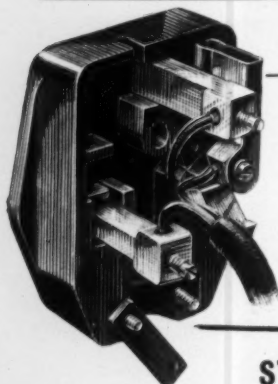
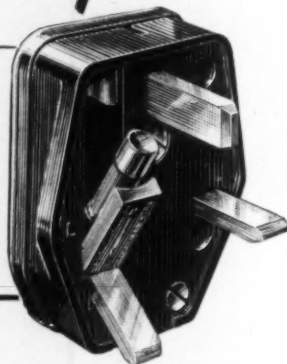
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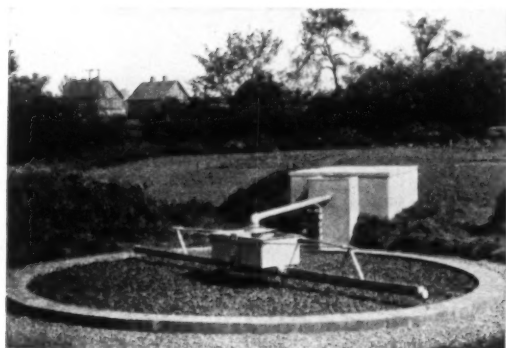
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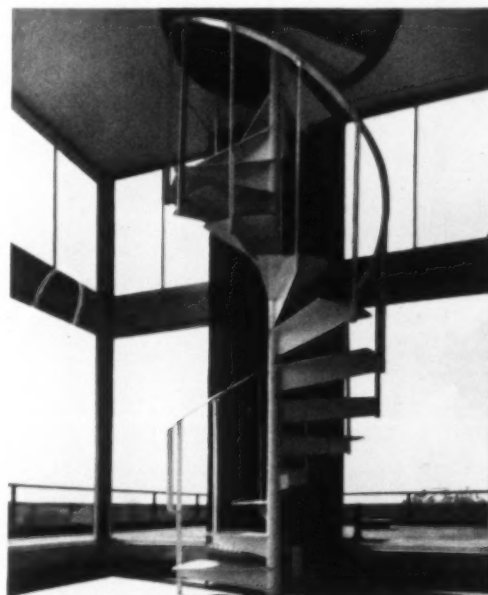
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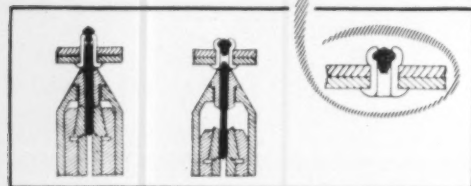
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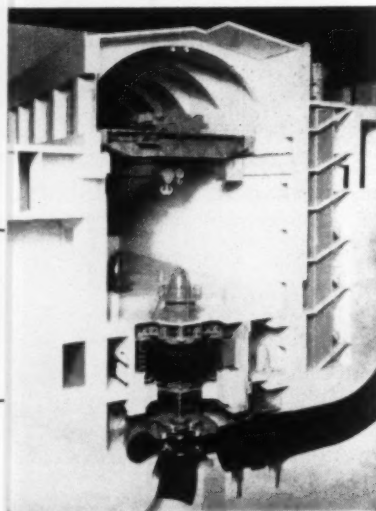
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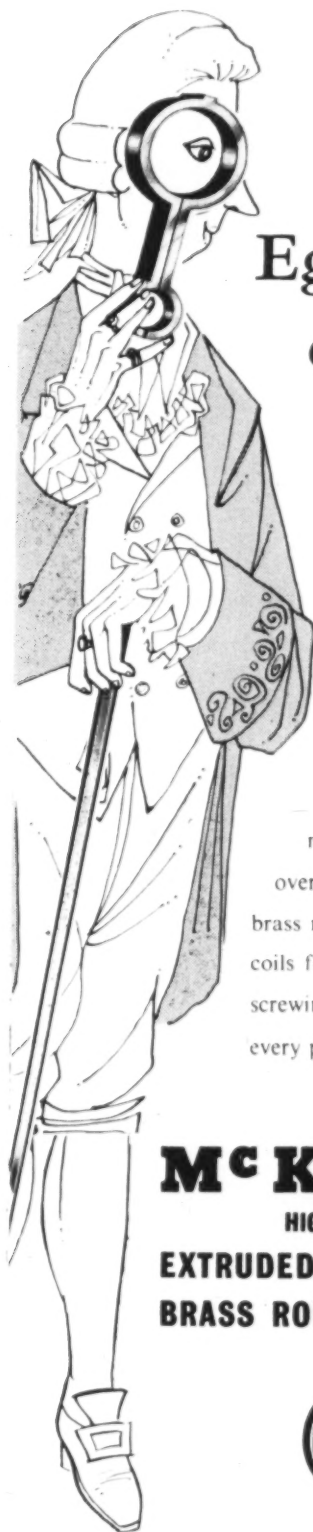
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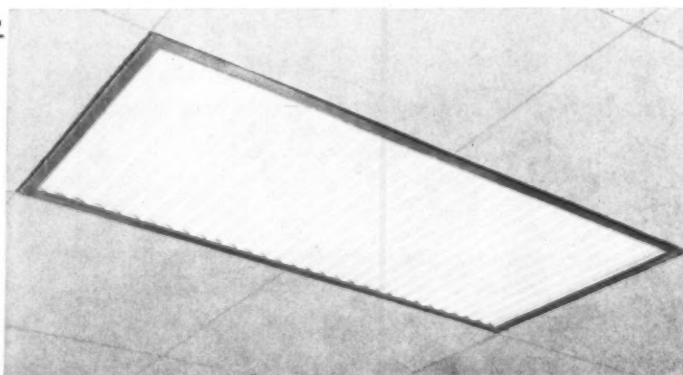
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M. de Pierrefeu contributes the introductory text, in which he outlines the principles that should be followed in the design and planning of the towns and homes of the new world so that the resources of science are fully applied to providing the best environment for the ordinary man. Le Corbusier's section of the book follows the same theme.

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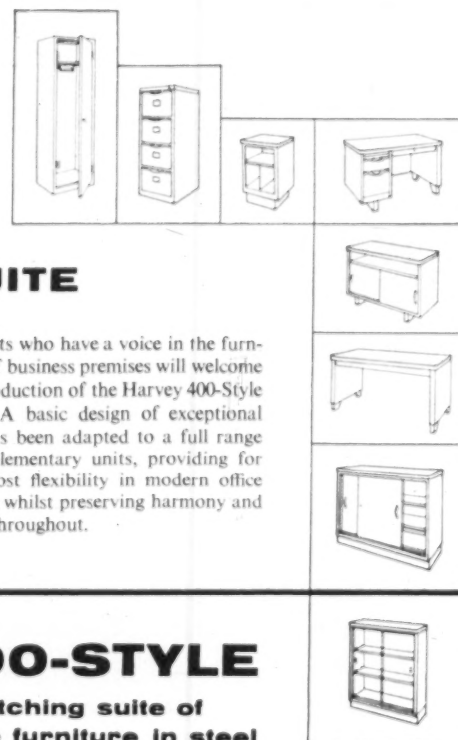


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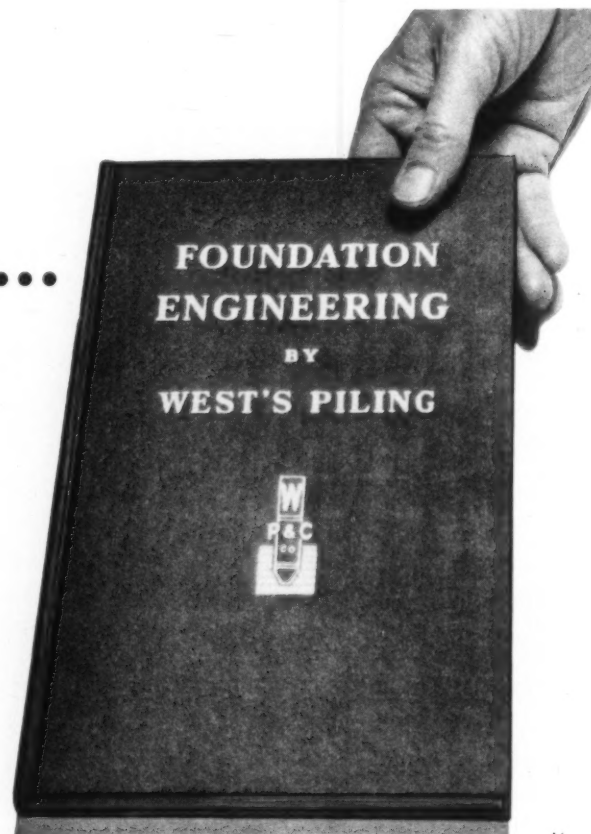
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